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*The Mature Learner:  
Understanding entrepreneurial learning processes of  
university students from a social constructivist  
perspective*

*Sabine Mueller*

A thesis submitted in partial fulfilment  
of the requirement of the Robert Gordon University  
for the degree of Doctor of Philosophy

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## Abstract

Entrepreneurship is identified as a highly complex (Neck and Greene 2011), unpredictable (Kuratko 2004), dynamic (Cope 2005) and constantly evolving (Anderson 2000) phenomenon that is embedded into and emerges from its social and cultural context (Jack and Anderson 2002; Rae 2001). Consequently, entrepreneurial learning is understood as a social learning process (Korsgaard and Anderson 2011) of profoundly experiential nature (Krueger 2007). The thesis addresses the development of entrepreneurship education and discusses the discrepancy between the large quantity of educations and their limited ability to respond to its current needs (Gibb 2005). A closer look is taken at the concept of learning and how the major learning theories contribute to understanding and enabling learning processes. It is argued that social constructivism (Gergen 1999) provides a good explanation of the entrepreneurial learning process (Chell 2000; Fletcher 2006; Rae 2006) as it considers knowledge to be constructed by the individual based on her experiences with the world.

But when looking at entrepreneurship students in a university context a question emerges. *If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

Based on a constructivist methodology (Gergen 1999) the research question is investigated in the scope of a qualitative study with 4 entrepreneurship education programmes in Europe. Semi-structured interviews to explore general aspects on learning were held with altogether 54 learners and 19 lecturers. To analyse data, a constructivist approach to Grounded Theory (Charmaz 2000) was chosen.

The results demonstrate that constructivism provides a good explanation of learning – especially in a higher education context. But while entrepreneurs seem to construct knowledge through *experiencing practice*, students seem to learn through *experiencing knowledge* in the scope of the education. Thereby, they use and develop certain personal qualities. First of all, the learning process requires a high level of *responsibility* for their learning which functions as a driving force to engage with new knowledge. Information is gathered and knowledge is 'experienced' through *social exchange* with peers and lecturers; and new knowledge schemes are built through critical and *independent reflection* on their learning. Thus, entrepreneurial learning emerges as an *iterative process*, altering discussion and critical reflection of knowledge. It brings about a personal development that concludes on a stage where learners successfully integrate their seeking for both social integrity *and* individuality. This stage seems to mark their individual *readiness* for entrepreneurial activities and may be considered as a stage of *personal maturity – or entrepreneurial maturity* – a stage where all previous qualities are harmoniously reconciled.

(422 words)

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## TABLE OF CONTENTS

Abstract .....	ii
Acknowledgements.....	iii
List of Tables.....	viii
List of Figures .....	ix
1. INTRODUCTION .....	1
1.1 Scope of study and objectives .....	1
1.2 Research problem and research question.....	3
1.3 Structure of dissertation .....	5
2. PERSPECTIVES ON LEARNING: A CRITICAL REVIEW .....	8
2.1 What is learning? Learning theories and implications for education .....	8
2.2 Classical learning theory: The mind as a blank slate .....	12
2.2.1 Early Behaviourism – Learning expressed through observable behaviour .....	12
2.2.2 Neo-Behaviourism – Beyond the observable .....	15
2.2.3 Conclusion & critique of behaviourist paradigm.....	17
2.3 Cognitivism – Individual learning processes .....	19
2.3.1 Social Cognitive Theory – Learning through observation .....	22
2.3.2 Cognitive Stage Theories – Learning based on cognitive structures .....	22
2.3.3 Gestalt Theory – Learning as a process of completion .....	24
2.3.4 Conclusion and educational implications .....	26
2.4 Constructivism – The individual construction of knowledge .....	27
2.4.1 Constructivist learning theory – Social and radical forms .....	29
2.4.2 Humanism – Learning for personal growth and development .....	32
2.4.3 Theories of adult learning – The autonomous learner .....	33

2.4.4 Critique and conclusion on constructivist learning theories .....	36
3. ENTREPRENEURSHIP AND ENTREPRENEURIAL LEARNING .....	39
3.1 What is entrepreneurship? .....	40
3.2 Development of entrepreneurship education .....	43
3.3 The challenge of teaching and learning entrepreneurship .....	46
3.4 Entrepreneurial learning in a higher education context .....	49
3.4.1 Higher order thinking and the role of theory .....	50
3.4.2 Experience and Reflection .....	51
3.4.3 Cognition and entrepreneurial learning .....	52
3.4.4 Autonomy and self-directed learning .....	54
3.4.5 Challenges and demands on higher education .....	55
3.5 Insights from learning theory: Understanding entrepreneurial learning? .....	56
3.5.1 Behaviourism - a "supply-model" .....	57
3.5.2 Cognitivism: A "demand-model" .....	58
3.5.3 Constructivism: A theory of entrepreneurial learning? .....	60
3.6 Conclusion and problems with the constructivist learning theory .....	63
4. METHODOLOGY .....	68
4.1 Methodological basis .....	69
4.2 Research design .....	71
4.3 Choice of sample .....	76
4.3.1 Programme 1: IMEET – International Master of Entrepreneurship Education and Training .....	80
4.3.2 Programme 2: Kaospilots .....	81
4.3.3 Programme 3: SMILE – Self-management Initiative .....	83
4.3.4 Programme 4: COEUR – Competence in EuroPreneurship .....	83
4.4 Methods .....	85
4.4.1 Instrumentation and interview schedule .....	86

4.4.2	Data collection – Sampling procedure.....	88
4.4.3	Data analysis.....	92
4.5	Conclusion on methodology chapter.....	96
5.	ANALYSIS AND RESULTS .....	97
5.1	Stimulation of learning.....	99
5.1.1	Students' preferences for learning.....	99
5.1.2	The lecturers' assumptions on learning preferences.....	108
5.2	Role understanding – The role of the learner .....	113
5.2.1	Student's expectations towards their role as a learner .....	114
5.2.2	The lecturers' role expectations towards students.....	121
5.3	Role understanding: The role of the lecturer .....	125
5.3.1	The learners' expectations towards the role of the lecturer .....	125
5.3.2	The lecturers' expectations towards their own role .....	132
5.3.3	Contradictory findings on the role understanding of lecturers.....	136
5.4	Limitations of entrepreneurship education .....	139
5.4.1	Limitations on individual level .....	140
5.4.2	Limitations on Programme Level .....	141
5.4.3	Limitations on Discipline Level .....	144
5.4.4	Limitations from the Lecturers' Perspective .....	146
5.5	Assessment of learning outcomes .....	152
5.5.1	The Assessment Method.....	153
5.5.2	Assessment Criteria.....	156
5.5.3	The lecturers' perspective on Assessment.....	162
5.6	Outcomes of entrepreneurship education.....	169
5.6.1	The learners' desired learning outcomes.....	169
5.6.2	Learning Outcomes from the Lecturers' Perspective .....	177
6.	DISCUSSION AND CONCLUSIONS.....	182

6.1 Stimulation of learning .....	182
6.2 Role understanding of learner and lecturer .....	183
6.3 Limitations to entrepreneurial learning .....	184
6.4 Assessment of learning outcomes .....	185
6.5 Outcomes of entrepreneurship education.....	185
6.6 The entrepreneurial learning processes of university students .....	186
6.7 Entrepreneurial Maturity: A process of personal development .....	189
6.8 Contribution, limitations and outlook .....	191
REFERENCES.....	188



## List of Tables

Table 1: Overview of learning paradigms and individual theories .....	11
Table 2: Behaviourist learning theories and implications for education .....	18
Table 3: Cognitive Learning theories and implications for education .....	21
Table 4: Constructivist learning theories and major contributing scholars .....	28
Table 5: Models of adult learning and their theoretical background .....	34
Table 6: Overview of constructivist learning theories and their implications for education.....	38
Table 7: Implications of learning paradigms and demands of entrepreneurial learning.....	64
Table 8: Constructivist solutions to key issues of entrepreneurship education.....	75
Table 9: Selection criteria for research sample.....	77
Table 10: Selected entrepreneurship education programmes and research sample.....	79
Table 11: Pedagogical structure and objectives of the program.....	84
Table 12: Variances in interview questions according to target group.....	87
Table 13: Example of crosslinks through axial coding.....	94
Table 14: Emergence of the central category.....	95
Table 15: Key issues and interview questions.....	97
Table 16: The research sample.....	98
Table 17: Stimulation of Learning .....	106
Table 18: Stimulation of learning – from lecturers and learners perspective .....	112
Table 19: Role of the Learner I .....	120
Table 20: Comparative Analysis of Perspectives on Role of the Learner .....	124
Table 21: Learners' Perspective on the Role of the Lecturer.....	131
Table 22: Comparative analysis of both perspectives on the role of the lecturer.....	138
Table 23: Limitations to entrepreneurship on an individual level .....	141
Table 24: Limitations on programme level .....	143
Table 25: 1 Limitations on discipline level .....	145
Table 26: Limitations located by lecturers on lecturers' level .....	148
Table 27: Limitations located by lecturers on learners' level .....	150
Table 28: Limitations located by lecturers on programme level.....	151
Table 29: Limitations to entrepreneurial learning – from lecturers and learners perspective .....	152
Table 30: Learners' Preferences for Assessment Methods .....	156
Table 31: Assessment criteria I.....	158
Table 32: Assessment criteria II.....	160
Table 33: Assessment Criteria III .....	162
Table 34: Preferences for Assessment Methods .....	165
Table 35: Comparative analysis – Preferences for assessment Criteria II.....	168
Table 36: Desired Outcomes of Entrepreneurship Education I .....	172
Table 37: Outcomes of Entrepreneurship Education II .....	173
Table 38: Outcomes of Entrepreneurship Education III .....	175
Table 39: Comparative Analysis of Expected Learning Outcomes .....	180

## List of Figures

Figure 1: Overview of research procedure .....	4
Figure 2: Development and focus of the major learning paradigms .....	9
Figure 3: Key issues of entrepreneurship education taken from Alberti et al. (2004:2) .....	73
Figure 4: Key issues of the study adapted from Alberti et al. (2004).....	74
Figure 5: Entrepreneurial learning process of entrepreneur .....	187
Figure 6: Entrepreneurial learning process of entrepreneurship students .....	187
Figure 7: Dynamics of Entrepreneurial Maturity.....	190

## 1. INTRODUCTION

This chapter provides a general overview of this work. It introduces the scope of study and its major objectives. It briefly outlines the rationale of the thesis and guides through the major argumentation towards the research question. It introduces the methodological approach and research design to address the research problem and summarizes the major findings and contributions.

### 1.1 Scope of study and objectives

Entrepreneurship is said to have become “the most potent economic force the world has ever experienced” (Kuratko 2005). At the same time, the economic, social and political conditions in which it is enacted have radically changed throughout the past decades (Gilbert and Eyring 2010). It is argued that entrepreneurship is complex, chaotic and lacks any notion of linearity (Neck and Greene 2011). Thereby, it is generally understood as a dynamic process of vision, change, and creation (Kuratko 2004). Entrepreneurship is placed in the context of a fast-moving global economy (Shepherd et al. 2008) affected by great economic uncertainty which requires entrepreneurial behaviour at all levels (Gibb 2005).

Today, numerous political and governmental measures are initiated to stimulate an entrepreneurial culture on societal level (Commission 2000, 2006; OECD 1989; Westall 1998). These measures seek to develop entrepreneurial competences within all members of society to better prepare for the social and professional challenges. The European Commission (Commission 2005, 2006) identified entrepreneurship as one of the key competences for lifelong learning to be stimulated across all educational levels. Thus, entrepreneurial qualities are considered to be a multidisciplinary need to cope with today’s situation of unpredictable change (Gibb 2005; Hynes 1996).

But the challenge lies in *how* to actually prepare for entrepreneurship. Entrepreneurship was identified as a complex (Neck and Greene 2011), unpredictable (Kuratko 2004), dynamic (Cope 2005) and constantly changing (Anderson 2000) phenomena. It is furthermore argued to be embedded into its social and cultural context (Jack and Anderson 2002; Rae 2001). And more than being embedded into a social context, entrepreneurship is argued to *be* a social construction in the sense that entrepreneurial activities emerge from the social environment of both business and entrepreneur (Korsgaard and Anderson 2011). Consequently, the way it is experienced and understood is highly subjective and almost differs from person to person. But how can education prepare for such a complex phenomenon?

Throughout the past decades, entrepreneurship education has rapidly evolved as an academic discipline (Katz 2008; Solomon 2002) and today there exist a countless number of programmes all over the world (Charney 2000; Solomon 2007). However, there are strong doubts whether the quantity of offers also meets the challenges of preparing for entrepreneurship in today's economic environment (Gibb 2002; Robinson and Haynes 1991). "The dilemma is not that demand is high but that the pedagogy selected meets the new innovative and creative mindset of students" (Solomon 2002). The question whether entrepreneurship can be taught at all was longtime debated (Blenker 2006; Fiet 2001a; Henry 2005) and some argue that it is not even clear *what* should actually be taught (Fiet 2001a; Fiet 2001b) nor *how* it should best be taught (Hannon 2005).

There is general agreement that entrepreneurship education has developed from teaching *about* entrepreneurship to teaching *for* entrepreneurship (Blenker 2006) and that entrepreneurial learning is a social learning process (Jack et al. 2004; Rae 2006) based on experiences (Corbett 2005; Honig 2004; Krueger 2007). However, it is argued that much remains to be understood about the entrepreneurial learning process (Corbett 2005; Rae 2006).

Thereby, the social constructivist learning paradigm (Gergen 1999) seems to provide a good explanation to understand the learning process of entrepreneurs (Chell 2000; Fletcher 2006; Rae 2006) and has recently achieved increasing attention by entrepreneurship scholars (Bécharde and Grégoire 2005; Kyrö 2005a; Loebler 2006). Social constructivism considers all learning to be socially constructed, profoundly

experiential and context-bound, and thus provides space for the nature of entrepreneurship. Social constructivism is radically different from the positivist based learning paradigms in that it allows learning to be unlinear, unpredictable, subjective and emerging from social context, just as entrepreneurship arguably does. Positivist learning paradigms, on the other hand, consider learning to be a somehow predictive reaction to an objectively existing reality and its stimuli and consequently seem to be of limited potential to explain entrepreneurial learning.

The study focuses on understanding entrepreneurial learning processes from a social constructivist perspective and thereby examines the particular environment of higher education. While social constructivism seems to provide insight into learning processes of entrepreneurs, the objective is to understand the learning processes of university students and to what extent those are based on constructivist principles.

## 1.2 Research problem and research question

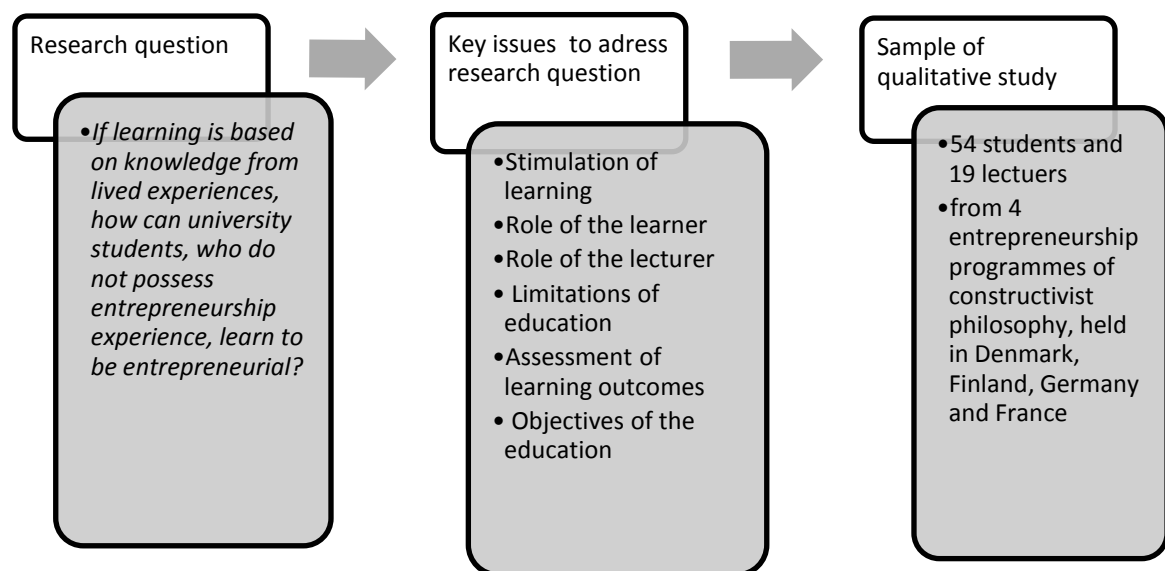
Constructivism is introduced as a theory of learning and a learning paradigm in a larger sense. Constructivism suggests that all knowledge is actively constructed by the learner and that learning always is an individual construction process (Duffy 1992; Gergen 1999; Glaserfeld 1996). Many scholars are very sceptical towards the constructivist paradigm, as it conflicts with established notions of science. It challenges the positivist perspective on objective facts and the existence of one reality – as independent from the individual. Thus, for constructivists the world is not to be discovered but to be constructed.

Today, many scholars argue that constructivism and especially social constructivism provides an appropriate learning theory to understand entrepreneurial learning (Fletcher 2006; Izquierdo 2008; Loebler 2006; Rae 2004) as it considers the complex, exploratory and unpredictable nature of entrepreneurship. But because of its complexity, the entrepreneurial learning process is opaque and not yet fully understood (Harrison 2005a; Politis 2005).

As learning according to constructivism happens on the basis of existing knowledge and experiences (Glaserfeld 1996) within the entrepreneur's social and cultural context

(Gergen 1999), entrepreneurs are expected to learn from and through their entrepreneurial practice within their social context (Dodd and Anderson 2007; Rae 2001). But this explanatory strength regarding the question 'how entrepreneurs learn' does not seem so obvious when it comes to understanding how entrepreneurship *students* learn. *If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

The study investigates this question by examining entrepreneurship programmes within a higher education context. It analyses learning processes of learners and lecturers of four international entrepreneurship programmes by means of semi-structured interviews. The overall question is indirectly approached through questions on a number of key issues of entrepreneurship education adapted from Alberti et al. (Alberti 2004).



**Figure 1: Overview of research procedure**

The figure above provides a general overview of how the research question is addressed. In the following the overall structure of the dissertation is outlined and a summary of the findings and implications of the study is given.

### 1.3 Structure of dissertation

The thesis is presented in five chapters. The present chapter provides the rationale of the study and guides through the major argumentation towards the research question. It introduces the research approach and design, and summarises the major findings and contributions.

**Chapter 2** is the first of two chapters reviewing relevant literature. Chapter two is more generic. It argues for and demonstrates the general importance of entrepreneurship and the need to educate for it. The central theme is *learning* and the epistemological question “How do we come to know what we know?” The chapter addresses this question on the level of learning theory and introduces the solutions provided by three major learning paradigms: Behaviourism, Cognitivism and Constructivism. Behaviourism understands learning as replicable change in behaviour and suggests traditional teaching methods and a generalized approach to transferring knowledge to learners. Cognitivism understands learning as information processing and suggests an individualized approach to education, considering the cognitive developmental level of each learner. The constructivist paradigm is radically different as it assumes all knowledge to be constructed by the learning individual based on experiences in the world; and learning cannot be controlled or instructed by a teacher. Each paradigm provides different epistemological assumptions which consequently lead to different ideas about learning and imply different pedagogical approaches.

**Chapter 3** presents the second part of the literature review and refers more specifically to the context of entrepreneurship and the development of entrepreneurship education. It creates an understanding of entrepreneurship as a highly complex and chaotic phenomenon, that emerges in a social and cultural context. It discusses how entrepreneurial learning needs to prepare for complexity and unpredictability, and identifies experiential forms of learning as most efficient.

The second part of the chapter contrasts the contributions of the three major learning paradigms against the needs of entrepreneurship education. It outlines the development from traditional teaching approaches based on behaviourist principles towards more individualized forms of learning and finally demonstrates how the constructivist

paradigm seems to provide an explanatory account for the question how entrepreneurs learn – which is based on their entrepreneurial practice. However, university students do not yet possess professional and/or entrepreneurship experience. This opens up the research question: *If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

**Chapter 4** suggests a constructivist methodology (Gergen 1999) to study the question of how students learn to be enterprising. It introduces the qualitative research design of the study which is based on semi-structured interviews to explore general aspects on learning within learners and teachers of entrepreneurship. The research sample consists of 54 learners and 19 lecturers of 4 international entrepreneurship programmes. Sampling was done purposefully and the programmes were chosen based a set of social constructivist principles that were previously identified in the education.

To analyse data, a constructivist approach to Grounded Theory (Charmaz 2000) was chosen and theoretical saturation of the emerging concept was achieved after analysis of four examined education programmes. The software QSR-NVivo (Richards 2005), that is arguably in line with principles of Grounded Theory (Hutchison et al. 2010), was used to manage the large sets of data and to structure reflections on the emerging themes.

**Chapter 5** presents the results of the study. It is organized around the six major themes that emerged from the data and which are closely linked to the initial questions from the interviews. The major themes are thus (1) stimulation of *learning*; (2) expectations towards the *role* of the *lecturer*; (3) expectations towards the *role* of the *learner*; (4) perceived *limitations* of the education; (5) preferred ways of *assessing* learning outcomes; and (6) expected learning *outcomes and objectives* of entrepreneurship education. Each section presents and contrasts the view of learners with the view of lecturers and highlights accordance and mismatch in perceptions. Overall, the results demonstrate very consistent constructions of learners and lecturers and show how their understanding of learning in the context of entrepreneurship education is strongly linked to responsible behaviour, social learning and personal development, as well as criticality and independent reflections.



**Chapter 6** discusses how the research results demonstrate that constructivism provides a good explanation of learning – especially in a higher education context. Constructivism considers learning to be a process of accommodation – the development of cognitive patterns and schemes to be coherent with the learners’ experiences.

The research results demonstrate how learners of entrepreneurship use and develop certain personal qualities to realize this process. They possess a high level of *responsibility* for their learning which functions as a driving force to engage with learning and actively make experiences in the world. Information is gathered and experiences are made through *social interaction* with the world inside and outside classroom; and theory and practice are fit together through criticality and independent reflection on experience. Thereby, critical thinking is what they use to judge on whether the experience fits or not with their patterns and might lead to change or modification in patterns – and thus to learning. The latter is not an isolated process but a social construction based on social connection to peers, tutors, entrepreneurs or others.

But learners also possess self-awareness and try to fit their entrepreneurial experiences with their individual aspirations. Learning thus becomes a cyclical process altering reflection and entrepreneurial experience – both within a profoundly social context. The learning process aims at making viable experiences that fit with previous reflections of the learner. Thus, even though learners have limited practical experience, their learning process still seems to be based on constructivist principles. Thereby, responsibility, social connectivity and independent thinking emerge as essential personal qualities that seem to develop as part of the entrepreneurial learning process. The chapter concludes that entrepreneurial learning is linked to a notion of personal maturity of the learner.

## 2. PERSPECTIVES ON LEARNING: A CRITICAL REVIEW

During the past decades, the understanding of how learning occurs has gone through a number of major paradigm shifts – all of which impacted on entrepreneurship education and the understanding of how entrepreneurs may learn (Kyrö 2005a). To explore the nature of entrepreneurial learning processes a general understanding of existing ideas and assumptions on how learning happens will first be presented. Accordingly, this chapter focuses on *learning* in a wider sense and depicts the development of the major theories of learning and their implications for the creation of a learning environment. The subsequent chapter then takes a closer look at how the issues surrounding the multifaceted and complex nature of entrepreneurship have been addressed. It depicts the nature and processes of entrepreneurial learning and teaching in the university context (Izquierdo 2008) and identifies entrepreneurial learning as an experiential learning process (Holcomb 2009), socially created (Jack et al. 2004) and placed in a particular context. In a third step, the review pulls these elements together and considers the contributions of the learning paradigms to understanding entrepreneurial learning and outlines the particular contribution of the constructivist paradigm. *Constructivism is identified as radically different approach, but it provides seemingly useful perspectives to understand how entrepreneurs learn. They construct knowledge through and from their experiences and based on the consequences of their actions. But from this explanatory strength emerges the research problem. If learning is a social construction process based on existing knowledge and experience, how can learners of entrepreneurship who lack both, manage to "construct" useful entrepreneurial knowledge?*

### 2.1 What is learning? Learning theories and implications for education

The history of learning theories is rich and complex and counts many diverse approaches to understanding and explaining learning processes (Hergenhahn 1993; Schwartz 1984). This chapter illustrates the basic developments in perspectives on human learning and how the term *learning* has gradually replaced *education* in the educational vocabulary

(Jarvis 1998). Sources stem from philosophy, psychology on learning as well as education science. Besides a large and heavily debated number of individual theories on learning, there is a widely but not fully accepted agreement that three perspectives have reached paradigm status and encompass most of the individual learning theories that have been of minor impact (Kyrö 2005a; Loebler 2006). Those are Behaviourism, Cognitivism, and Constructivism. Kyrö explains that "(...) behaviourism started to dominate learning theories. This was followed by the cognitive paradigm and finally, in the post-modern transition, by the constructivist paradigm and later also social-constructivism" (Kyrö 2005:82). This first chapter of the literature review introduces the major learning theories as part of the according paradigm. Their evolutionary contribution to the understanding of learning is presented in the scope of these three paradigms.

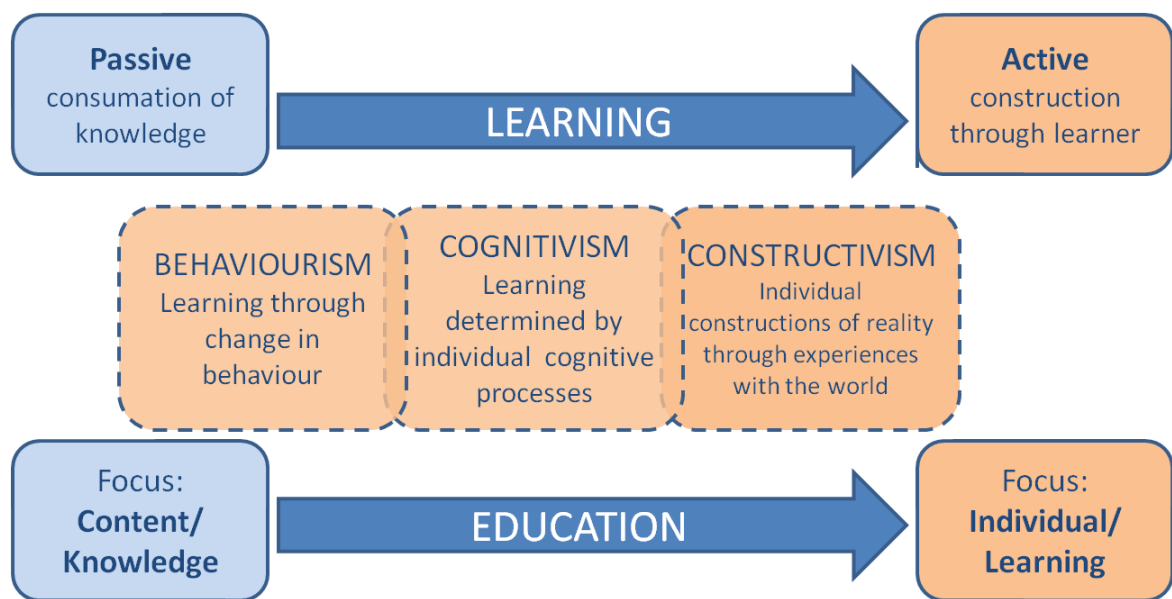


Figure 2: Development and focus of the major learning paradigms

Each of the paradigms was born and developed in a particular context that was coined by a certain understanding and assumptions on learning (Jarvis 1998; Kyrö 2005a; Ormrod 1998). The behaviourist paradigm starts with understanding learning as a change in behaviour and suggests a rather passive and instruction based teaching approach that aims at achieving a predefined *behaviour* (Skinner 1953). The cognitivist paradigm considers individual *cognitive processes* and suggests a teaching approach adapted to the

individual and his/her level of cognitive development (Bandura 1977; Piaget 1929). The constructivist paradigm regards knowledge as constructed by the individual and suggests an education that is governed and directed by the learner (Gergen 1999; Glaserfeld 1996; Loebler 2006). But despite apparent differences and opposed positions within and between these paradigms, they are at the same time interconnected as they have evolved out of each other and scholars of the one paradigm have helped emerging the other based on the insufficiencies of the first (Hergenhahn 1993; Kyrö 2005a; Ormrod 1999). Thus, there are no clear oppositions and definite boundaries between them (Hergenhahn 1993). Although different and reflecting different underpinnings, the evolution can be seen as an emergent continuum as demonstrated in Figure 2.

However, when taking a closer look at the single learning theories, the evolution across paradigms has been highly complex and not always linear. Some theories cannot be clearly attributed to just one paradigm. Overlapping and commonly accepted examples for classifications are found in Merriam and Caffarella (Merriam 1991), Ormrod (Ormrod 1998) and Knowles et Al. (Knowles 2005) identifying five major schools: *Behaviourist, cognitivist, humanist, social learning and constructivist school*. However, as argued above only Behaviourism, Cognitivism and Constructivism are considered to have reached *paradigm* status. Social learning is integrated into the cognitivist paradigm whilst the humanist school is presented as part of the constructivist paradigm. Humanism may be considered a meta-theory that did not reach a paradigm status (Kyrö 2005a; Loebler 2006). Additionally, andragogy as a theory of adult learning is presented in the scope of the constructivist paradigm as it possesses strong constructivist implications and considers learning processes to be entirely coordinated and governed by the learner (Knowles 2005; Knowles 1985; Kyrö 2005a).

Table 1 gives an overview of the learning paradigms and its major individual learning theories as introduced in this chapter.

Learning Paradigm	BEHAVIOURISM	COGNITIVISM	CONSTRUCTIVISM
Under- standing of Learning	Learning as a response to <i>certain stimuli</i> of the environment; translates into observable and replicable <i>change in behaviour</i> ;  Exclusion of internal cognitive processes	Learning is a <i>cognitive process</i> unique to human beings; individual learning processes through different ways of relating new information to existing structures (information processing)	Learning as construction of individual realities through interaction with social world (experience); Learning is a self-responsible and intrinsically motivated process;
Pedaogical Focus	Observable behaviour based on previous stimuli / <b>Controlling learning</b>	Cognitive processes of learners / <b>Understanding learning processes</b>	Respecting individual realities / <b>Providing learning experiences</b>
Epistemo- logical position	<i>Empiricism</i>	<i>Rationalism</i>	<i>Constructivism</i>
Individual Learning Theories/ & main Theorists	<ul style="list-style-type: none"> <li>• <i>Classical Conditioning</i> PAVLOV (1927)</li> <li>• <i>Radical Behaviourism; Instrumental/ Operant Conditioning</i> THORNDIKE (1932) GUTHRIE (1935) WATSON (1913) SKINNER (1953)</li> <li>• <i>Neo-behaviourism/ Early Cognitivism</i> TOLMAN (1922); HULL (1943); SPENCE (1948); BANDURA (1961)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Social Learning</i> BANDURA (1977)</li> <li>• <i>Gestalt Theory</i> WERTHEIMER (1912) KÖHLER (1929) KOFFKA (1935)</li> <li>• <i>Cognitive Stage Models</i> PIAGET (1929,1947) VYGOTSKY (1978) BRUNER (1966)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Radical Constructivism</i> GLASERFELD (1996)</li> <li>• <i>Social Constructivism / Critical Theory</i> GERGEN (1999) FREIRE (1998)</li> <li>• <i>Humanism (Meta-learning theory)</i> ROGERS (1969)</li> <li>• <i>Andragogy</i> KNOWLES (1985;2005)</li> </ul>

Table 1: Overview of learning paradigms and individual theories

Whilst table 1 maps the scope of the paradigms, it is also important to establish the development of theories on how humans learn. This chapter depicts the successive development of the three major learning paradigms based on the contributions and implications of their individual learning theories. It creates an understanding of how every learning theory may lead to certain forms of learning that may be of value in different contexts and situations. The theories are first presented, but followed with an

overview of their understanding of learning, their learning objectives, their implications for education and the way they are linked to other scholars and theories.

### 2.2 Classical learning theory: The mind as a blank slate

The 'classical learning theory' originates from psychology. It investigates learning as *change in behaviour* and thus frequently uses the term behavioural theory as a synonym for learning theory (Lefrancois 1972). Behaviourists investigate the objective and observable elements of human behaviour resulting as a response to certain, definable stimuli and thereby largely exclude internal cognitive processes (Bouton 2007, 2009; Lefrancois 1972; Ormrod 1999). Stimulus-response principles are at the heart of this learning paradigm that is grounded in *empiricism*, an epistemological position according to which knowledge is gained from experience, observation or experiment (Gupta 2006). Thereby, humans as well as animals were considered to learn according to these principles. Because there is still ongoing debate about the definition and naming of the major schools (Powell 2005) this paragraph primarily focuses on the major scholars and their contribution to the understanding of learning and its implications for classroom teaching (Hergenhahn 1993).

#### 2.2.1 Early Behaviourism – Learning expressed through observable behaviour

Early attempts to understand human learning can be found several hundred years ago when people were trying to understand human behaviour and the nature of humans in general (Bouton 2007). The French philosopher René Descartes (1596-1650) arrived at the concept of dualism between body and mind (Descartes 1644 / 1984) and Philosophers such as John Locke (1632-1704) and David Hume (1711-1776) shaped a development called the British empiricists, who compared the mind of a new born child to a "tabula rasa" to be filled by experiences (Mowrer 1989). An alternative viewpoint was held by the rationalists, mainly developed through Immanuel Kant (1724-1804), who stated that besides a learning through experiences, the human mind was naturally equipped with a certain set of assumptions – so called "a priori", such as an

understanding of space and time, and that these a priori assumptions coin the experiences we make (Bodenmann 2004; Bouton 2009; Mowrer 1989). In the 18<sup>th</sup> century, Charles Darwin (1809-1882) proposed the theory of evolution and described the development of species as a process of natural selection. This discovery initiated broad observational research activities on animal behaviour in the scope of a development called the “early comparative psychologists” (Bouton 2007).

### *Ivan P. Pavlov (1849-1936) - The conditioned reflex*

The Russian physiologist Ivan Pavlov is considered to be the pioneer of traditional learning theory. Pavlov was primarily a physiologist, with strong research interest in the digestive system that he researched with animals and later with humans. He suggests that behaviour is a reflex to stimuli and can thus be conditioned (Pavlov 1927). It is particularly hard to draw direct conclusions on the creation of a learning environment as learning purposefully arranged through classical conditioning would rather resemble 'brainwashing' than actual learning (Hergenhahn 1993). However, classical conditioning albeit incidental in its nature happens all the time and is thus also present in classroom and school environment. For example, when a maths teacher was particularly authoritarian and strict with students, those might connect mathematics to a very unpleasant feeling of obligation and rigidity later on.

### *Edward L. Thorndike (1874-1949) – Stimulus-response principles*

Thorndike was one of the early comparative psychologists coining the term behaviourism. He studied the learning of cats to understand the animal mind and discovered that they could change their behaviour based on experience (Thorndike 1903, 1932). He also suggested that learning was an outcome of trial and error, as the cats in his experiments had tried several options before finding the correct one. His approach was classified as *instrumental conditioning* (Hergenhahn 1993) but also as *operant conditioning* (Powell 2005) as the animals operated on the environment, just as in Skinners experiments (Skinner 1953). Thorndike had very precise ideas on how his views relate to teaching practice. First of all, a class should always have clearly defined objectives. These must be related to a targeted behaviour so that the achievement of the objectives and thus learning can be measured (Hergenhahn 1993). Thereby, the classroom should replicate reality as precisely as possible which would allow the learner

to refer learning in classroom to similar stimuli outside classroom. Furthermore, Thorndike considered external stimuli to determine the learner's behaviour and suggested the use of positive control meaning that any satisfying behaviour would strengthen learning while unsatisfying behaviour/responses wouldn't weaken the learning effect and should simply be avoided but not punished. Thus, correct behaviour should be reinforced quickly (Hergenhahn 1993; Powell 2005; Thorndike 1932). To better trace learning outcomes the lecturer would proceed from simple to more complex tasks and as incorrect learning should not be internalized through repetition, regular examinations are needed to control the correct learning of course content.

### *John B. Watson (1878-1958) – The conditioned emotion*

Besides the achievements of Thorndike, the term behaviourism was also coined by the psychologist John B. Watson (1878-1958) in 1913 (Watson 1913) and defined as a natural science approach to psychology that focuses on the study of environmental influences on observable behaviour (Powell 2005). The work of John B. Watson (Watson 1913) was very similar to Thorndike's even though Watson did not derive implications for classroom teaching from his work (Hergenhahn 1993).

### *Edwin R. Guthrie (1886 – 1959) – Learning by doing*

Guthrie relates learning to sensory-motor reactions thus *movements* rather than behaviour and in accordance with Watson, learning is only considered to happen when accompanied by an active "doing" or movement by the learner (Bouton 2009; Hull 1943). Through his contiguity theory he states that stimuli which accompany a certain movement will at its reoccurrence bring about the same movement (Guthrie 1935). Contiguity theory indicates that learning obeys to a principle of "one-trial" / "contiguity" and does not require reinforcement which means that principles of reward or punishment do not apply. Guthrie's work was close to Thorndike's and in his publications on classroom practices he also focuses on the importance of clearly defined learning objectives to identify the responses expected on certain stimuli. But different from all the other behaviourists he does not attribute importance to reinforcement through repetition or punishment to avoid certain behaviour. In his view learning is considered to be a one-trial process (Guthrie 1930, 1935; Hergenhahn 1993).



*B.F. Skinner (1904-1990) - Learning through consequences*

An heir of Watson and considered to be one of the most influential behaviourists as well as one of the most radical scholars of the discipline, his research strictly sticks to the empirical correlation between stimulus and response. Through his early works he developed a type of behaviourism entitled *radical behaviourism*. In accordance with Pavlov, Skinner considered that behaviour could best be analysed as a reflex (Powell 2005). One of his most important contributions was the 'Skinner box' which was given this name by Hull later on. In this box, a rat would press a lever to obtain a food pellet. This learning process was called operant conditioning as the rat operates on the environment (O'Donohue 2001; Skinner 1953). Thereby, the food pellet presents a *consequence* of the rat's behaviour (response) and is called a *reinforcer*. Skinner observed that operant behaviour is controlled by its consequences. He drew lots of parallels to classroom teaching and had much in common with Thorndike in this respect. First of all, the learning objectives would have to be clearly and *behaviourally* defined. Thereby, more than other scholars, Skinner focuses on the desired behaviour – a teacher would like to achieve from students. If the learning objective could not be defined by behaviour, there was no way of knowing if students actually learned (Dilman 1988; Skinner 1950, 1953).

In accordance with Thorndike, external reinforcers or incentives play an essential role in the learning process. Since he believes behaviour to be based on its consequences, he suggests rewarding and reinforcing desired behaviour while simply ignoring but not punishing undesired responses (Dilman 1988; Hergenhahn 1993).

### 2.2.2 Neo-Behaviourism – Beyond the observable

The literature distinguishes two types of behaviourism. Edward Tolman's (1886 – 1959) approach to behaviourism is also called *operational behaviourism* (Bouton 2007) and is considered to belong to the second type of behaviourism. Tolman's theory is very different from the Skinnerian approach in that it accepts *unobservable* events to explain behaviour (Bouton 2009; Tolman 1922). Both Skinner and Tolman developed their theories in the 1920s when scholars were wondering what it takes to study learning

processes scientifically. Tolman believed that learning was more than the reaction of an organism to a stimulus and that learning theory should investigate the processes between stimulus-reaction more holistically, especially considering the inner motivation of the learning individual (Ormrod 1999; Tolman 1932; Uttal 2000). Tolman was the first to initiate a less radical perspective on behaviourism and opened up to the learner's inner motives to learn. These may be various and connected to complex inner processes such as emotions, desires or instincts.

His common point with cognitive and especially Gestalt theory is the understanding of learning as a *problem solving process* (Powell 2005; Tolman 1922). The learning environment must thus provide a problem that would initiate learning processes through the learners attempt to solve it. Like the Gestalists, he believed that a problem creates a state of inner dissonance until the learner has found a satisfying solution to it. The teacher would thus be attributed the role of a consultant who would help the learner to confirm or disconfirm the hypothesis he/she formed on how to solve a problem (Hergenhahn 1993; Ormrod 1999; Ormrod 1998; Powell 2005).

*Clark Hull (1884 – 1952) / Kenneth Spence (1907 – 1967) – Learning through motivation*

Just as Tolman, Edward Hull was one of the first to open the "black box" (the mind) that traditional behaviourists avoided. In his concept of *drive* (Hull 1943), he relates learning to an *inner state of motivation*. Learning according to Hull is based on individual needs that create inner motivation to learn and satisfy those. The Hull 'Theory of Drive' or 'Drive Reduction' (Hull 1943; Hull 1940; Mowrer 1989) was further developed by Spence (Spence 1948) and is often referred to as Hull-Spence theory of drive (Mowrer 1989; Ormrod 1998). It is essentially different from previous more radical theories of learning (i.e. Skinner, Watson) as it focuses on the inner *motivation* of the learner. Hull never made an effort to identify implications for the learning environment (Hergenhahn 1993), but one could estimate that to initiate learning, the task of the teacher would be to the creation of intrinsic motivation and thus a personalized approach to teaching.

*Albert Bandura (\*1925) – Learning through observation*

The psychologist Albert Bandura played a key role in the transition from the behaviourist to the cognitivist learning paradigm. Bandura started his career based on a behaviourist education and added a new component to the prevailing research focus on reinforcement or punishment to achieve learning: He considered pure *observation* and consequent *imitation* as a source of learning (Bandura 1977; Zimmerman 2003). Through his famous Bobo Doll experiment in 1961 and 1963 on behaviour patterns of children, Bandura demonstrated that children would adopt aggressive behaviour by pure observation of aggressive adult models (Bandura 1961). His work advances a view of learning that is essentially *social* and *self-directed* (Amsel 1989; Bandura 2001; Zimmerman 2003) and contributes the idea that besides explicit stimulus-response principles, learning is a complex process that can be initiated through *observing* our environment. Thereby, the teacher turns into a role model and can become a standard for the learner's self-evaluation and influence on his/her standards of self-criticism and self-praise (Bandura 2001; Hergenhahn 1993). Learning as a process of social observation and imitation is bound to the *socio-cultural context* humans live and grow up in as well as to *personality* dispositions. Both touch on the unobservable areas of learning which traditional behaviourists strictly avoided and thus opened up a new era of research (John 2008; Zimmerman 2003). Bandura's contributions to cognitive learning theories are further detailed in the next section.

### 2.2.3 Conclusion & critique of behaviourist paradigm

Even though within the learning paradigm of behaviourism many different developments occurred, they all largely share an understanding of learning as behaviour that can be influenced and controlled through external stimuli. At the same time, behaviourism does not consider or investigate any cognitive processes as "for the behaviourist, "mental processes" are to be identified and defined in terms of the behaviours to which they lead" (Tolman 1932:3). However, in later studies and especially through scholars belonging to the Neo-behaviourist school, the importance of intrinsic motivation and inner drive to learn was increasingly emphasized.

Table 2 sums up the contribution of the major behaviourist scholars and the implications of their approach for classroom teaching.

<i>Scholar Contribution</i>	<i>Assumptions on learning</i>	<i>Relation to other scholars</i>	<i>Implications for classroom teaching</i>
<b>PAVLOV</b> / Classical Conditioning		Founder of Classical Conditioning	classical conditioning happens all the time also in classroom; usually incidental; rather conditioning than education when purposefully used to modify behaviour of learners
<b>THORNDIKE</b> / Instrumental/ Operant Conditioning	Education needs clearly defined learning <i>objectives</i> ; objectives must be " <i>doable</i> " to measure learning through behaviour; little importance of inner motivation; proceed from simple to complex learning behaviour	Discovered stimulus-response relationship; coined <i>Behaviourism</i> as learning theory together with Watson	Learning through trial and error; Classroom should replicate reality; learning through external stimuli; focus on achieving correct responses to stimuli; avoid repetition of false responses
<b>WATSON</b> / Methodological Behaviourism		Founder of Behaviourism together with Thorndike	Most radical approach to focus on purely observable behaviour, no implications for teaching
<b>GUTHRIE</b> / Contiguity Theory		Close to Thorndike's work	Classroom should replicate reality; Education as attempt to <i>purposefully</i> associate stimuli and responses; targeted punishment at the occurrence of disruptive behaviour
<b>SKINNER</b> / Operant Conditioning		Heir of Watson; Like Thorndike and Hull importance of <i>external reinforcers</i>	Avoidance of punishment; reinforce appropriate and ignore inappropriate behaviour
<b>TOLMAN</b> / Operational Behaviourism	Importance of <i>thinking</i> and <i>understanding</i> ; <i>intrinsic motivation</i> over external stimuli	Early Cognitivism; Close to Bandura; Accordances with Gestaltists	Testing of hypotheses in problem solving context; focus on eliminating incorrect responses; teacher as consultant who clarifies and dis/confirms hypotheses
<b>HULL</b> / Neo-Behaviourism	Concept of ' <i>Drive</i> ': Importance of <i>inner motivation</i> to learn	Different from previous scholars through importance of inner motivation	Teacher must create motivation to learn; education must be <i>individualised</i> ;
<b>SPENCE</b> / Neo-Behaviourism	Importance of <i>inner motivation</i> and <i>incentives</i> ; importance of <i>ind. needs &amp; satisfaction</i>	Further development of Hull's work; contiguity theorist as Guthrie; close to Tolman and Bandura through focus on <i>performance</i> as result of incentives	Using incentives to achieve performance; Strong experiential approach to learning - learning by doing
<b>BANDURA</b> / Neo-Behaviourism	<i>Observation of social models</i> as a means to learn; intrinsic motivation over external stimuli	Spurred transition to Cognitivism; (Later: Cognitive Social Learning Theory);	Teacher as role model can become standard for learners self-evaluation; learning through experience as well as observation that is internalized and becomes individual standard

Table 2: Behaviourist learning theories and implications for education

We can see that the early and more radical forms of behaviourism as of Thorndike, Skinner, Watson and Guthrie strongly focus on the use of external stimuli to achieve certain responses. They concentrate on observable behaviour as the only indicator of

learning. The Neo-Behaviourist approach of Hull/Spencer, Tolman is essentially different through its belief in a more individualized approach to education that takes into account the intrinsic motivation of the learner as a key to learning processes. Especially the work of Bandura that considered cognitive aspects related to social learning processes and personality initiated a shift towards the cognitivist paradigm and its consequent focus on understanding individual learning processes.

The debate on learning is less dialectical today than it was in the 1950's. The radical behaviourists, especially Skinner and Watson, have revised their assumptions and included individual learning differences and non-behavioural elements into their considerations (Amsel 1989). However, even though some scholars take into consideration the emotional and inner states of learners and use individualized incentive systems to encourage learning, the learning environment is still based on empiricist principles and aims at observing and controlling learning behaviour.

Attacks from outside the discipline were mostly directed towards the idea of a *scientific* approach to psychology (Schink 1987). For example the main argument of Carl Rogers as phenomenologist and humanist was directed against laboratory psychology and the impersonal approach to science (Amsel 1989), but also the idea that learning is controlled by external circumstances and can be evoked through stimuli, while Rogers believed in the independence and autonomy of every learning individual (Rogers 1961).

### 2.3 Cognitivism – Individual learning processes

The cognitive paradigm emerged from the consideration of the complexity of the human mind and the difficulty in applying results from animal experiments to predict human learning behaviour (Mackintosh 1997). As opposed to the empiricist basis of behaviourism, cognitivists took a *rational* epistemological position (Kyrö 2005a) and tried to understand learning as a process of *information processing*, by almost comparing the human brain to a computer program (Fiske 1984; Searle 2002). As part of the rationalist position, knowledge is considered to be part of an 'a priori' truth that can be discovered and accomplished through rational reasoning. As opposed to the empiricist paradigm of behaviourist learning theories, rationalism mostly excludes sensory perception and

experience (empiricism) as a source of knowledge and focuses on rational reasoning (Aune 1970; Kyrö 2005a; Lacey 1976). However, today, a large and very diverse variety of learning theories may be considered as part of this paradigm and there is no complete consensus on a common definition or definite way of categorizing the diversity (Derry 1996; Mayer 1996; Prawat 1996). Nonetheless, Ormrod (Ormrod 1999) summarizes the core assumptions of cognitive approaches as follows.

- Some learning processes may be *unique to human beings*
- *Cognitive processes* are the focus of study
- Objective, systematic observations of people's behaviour should be the focus of scientific inquiry; however, inferences about *unobservable mental processes* can often be drawn from such behaviour
- Individuals are *actively involved* in the learning process
- Learning involves the formation of mental associations that are *not necessarily* reflected in *behaviour changes*
- Knowledge is organized
- Learning is a process of *relating* new information to previously learned information

The table below summarizes the major cognitive approaches, their founding and essentially contributing scholars, as well as their implications for classroom teaching and links and connections to other scholars and learning theories.

<i>Learning Theory</i>	<i>Scholars</i>	<i>Understanding of learning</i>	<i>Implications for classroom teaching</i>	<i>Links to other scholars/theories</i>
Social Cognitive Theory	BANDURA	Learning through observation of social environment and internalization of <i>knowledge for self-evaluation</i>	Lecturer as social model for learner's self-evaluation; essential influence on students self-efficacy beliefs	Importance of intrinsic reinforcement(Gestalt/Tolman); respect of learner's level of motoric skills and language ability (Piaget)
Gestalt Theory	WERTHEIM / KÖHLER/ KOFFKA	A process of problem solving and through which mental disbalances are completed / Creation of meaningful wholes	Targeted confrontation of learners with problems to stimulate solution finding process;	Solution to a problem comparable to intrinsic reinforcement in Neo-Behaviourism (Bandura) Koffka believed in sensorimotor learning ( Piaget), and learning by imitation (Bandura)
Cognitive Stage Models	PIAGET /KOHLBERG/ /VYGOTSKY	Learning means mentally adapting to the world through modifications in cognitive structure to accommodate new information	Education needs moderately challenging experiences building on existing cognitive structures and allowing new ones to be created	Learning through moderately challenging tasks to build on existing knowledge (Bandura )

**Table 3: Cognitive Learning theories and implications for education**

Considering the diversity of cognitive approaches, this paragraph focuses on its major theoretical approaches, exemplifying those with the work of their most famous scholars. First, the social cognitive approach – initially known as social learning theory – mainly developed by Bandura is presented. The approach emerged from behaviourism and thus presents the strongest link to the previous paradigm (Bandura 1977, 2001; Ormrod 1999). Subsequently, the Gestalt approach to learning is introduced: It was mainly developed by German psychologists like Wertheimer, Köhler, Koffka (Ash 1995; Asher 2003; Woldt 2005). This is followed by the developmental theories and stage models of Jean Piaget, Lawrence Kohlberg and Lev Vygotsky (Brainerd 2003; Ormrod 1999). The contribution of Vygotsky was often described as ‘cognitive constructivism’ (Glaserfeld 1996). It laid the basis for the emergence of the constructivist paradigm that introduced in the subsequent

section. Each approach is presented and discussed regarding its implications for education and their links to other scholars and theories.

### 2.3.1 Social Cognitive Theory – Learning through observation

Social cognitive theory focuses on what and how people learn from one another and includes concepts such as observational learning; imitation and modeling (Ormrod 1999; Ormrod 1998). Albert Bandura was one of the major scholars contributing to its development from an initially behaviourist basis. In his later works he developed the theory of self-efficacy that had many implications for classroom teaching (Bandura 1977; Bandura 1961). He defines self-efficacy as the belief of an individual that his or her actions can produce desired outcomes, and found that a sense of personal efficacy is crucial for understanding a learner's reactions to failures and challenges (Bandura 1997). Convinced that learning happens through experience, but also through mere *observation* of social models, he believed that those are more likely to serve as source of social learning when the learner attributes a certain status, power, competence and respect to them. Thus, teachers are considered to be highly influential models that could transmit a wide scope of knowledge but also skills, problem solving strategies, creative thinking, performance standards and moral principles (Hergenhahn 1993). Other role models could also be influential, which is why teachers should expose students to a variety of potential role models such as police officers, politicians or doctors who could transmit certain values. Also symbolic models and the study of their life and achievements can be effective. Learners would then learn through *internalizing* the knowledge, values and principles transmitted by the model and make it their inner standard for self-praise and self-criticism (Bandura 1977; Bandura 1963). This process is called self-regulation. Over the years, these inner standards become increasingly stable and individuals become more and more self-regulating and less influenced by social models (Bandura 1997; Lefrancois 1972; Ormrod 1999).

### 2.3.2 Cognitive Stage Theories – Learning based on cognitive structures



In the 20<sup>th</sup> century a number of cognitive psychologists contributed to our understanding of human learning and strongly influenced classroom pedagogy all over the world.

Jean Piaget (1896-1980) was a developmental psychologist. His interest was in understanding the development of cognitive structures within humans and his work was built on by developmental psychologists and later delivered the basis of the constructivist understanding of learning. Piaget believed that learning is a process of adapting to the environment. This adaptation happens through the interplay of assimilation and accommodation processes. Assimilation signifies the incorporation of new information into existing cognitive structures without modifying or adapting the cognitive structures of the learner. If the new information is too conflicting or different from existing structures that it cannot be absorbed, the process of accommodation – the adaptation of cognitive structures – takes place (Flavell 1963; Piaget 1929). Piaget was the first to identify developmental stages of cognitive structures which he related to the learners' age (Piaget 1947). Piaget argues that to initiate learning, the teaching material needs to be adapted to the learners developmental stage and partially known and partially unknown, so that the new information can be accommodated into existing structures (Hergenhahn 1993).

At the same time, Piaget's work is considered to imply some major limitations, mainly the end of the stages at the age of 15 and the rigid attribution of age spans, because there might be further developmental stages in adult life or individual differences in the lengths of stages (Jarvis 1998). In his eight stages of psycho-social development, Erik Homburger Erikson (1902-1994) expands Piaget's age classification and covers human development from childhood to late adulthood (Erikson 1959). Each stage holds specific cognitive challenges that through confrontation and successful mastery will bring the learner to the next stage (Erikson 1959).

A major critique is that by Lev Vygotsky (1896-1934), a famous Russian developmental psychologist, regarded the missing relationship between learner and the *world*, as Piaget's work focused on mental processes and their relation to biological age, but not on the relationship between mental processes and their interaction with the exterior world (Jarvis 1998). In his theory of social development (Vygotsky 1978) Vygotsky argues that social interaction precedes any cognitive development, and that consciousness and cognition are an outcome of socialization and social behaviour (Moll 1990; Vygotsky

1978). Vygotsky's work belongs to early social constructivist reflections and contributes to the transition towards the constructivist learning paradigm as it points out the strong influences of social and cultural contexts on learning and development (Moll 1990; Tudge 2003; Vygotsky 1978).

Lawrence Kohlberg (1927-1987), an American psychologist, judged Piaget's model as too simplistic, as some people might mix their modes of development across stages (Jarvis 1998). Kohlberg developed a stage model on *moral* development stages (Kohlberg 1981). The model does not contain specific age indications but identifies a learner's stage according to moral decisions he/she would take in specific situations. A learner's level of cognitive development could thus be identified according to moral principles he/she holds.

We may conclude that cognitive stage models introduced the idea that education and especially learning objectives should be adapted to the cognitive development of the learner. Even though there is debate on how cognitive stages may best be identified – through age, problem solving capabilities or moral principles – we may summarise that large parts of human learning is not based on age but is *experiential*. It contributes the idea that humans confront new experiences based on the knowledge gained from previous ones regardless their age, but not regardless their social and cultural context.

### 2.3.3 Gestalt Theory – Learning as a process of completion

The approach of Gestalt Theory was initiated by the German psychologist Max Wertheimer (1880-1943), in close cooperation and agreement with his colleagues Wolfgang Köhler (1887-1967) and Kurt Koffka (1886-1941) (Ash 1995; Asher 2003). Gestalt theory had its official beginning in 1912 through Wertheimer's article on the phi-phenomenon (Wertheimer 1912). The phi-phenomenon describes a perceptual illusion of a single light provoked by two alternately flashing lights changing from one to the other at a certain speed (Wertheimer 1912). The conclusion drawn from that experiment was not behaviouristic as expected but entailed a new understanding of human learning and how we make sense of experiences.

The researchers suggested that the way we experience the world (phenomenal experience) is a result of sensory experience. But to understand the phenomenal experience (illusion of one light), it is insufficient to analyse the sensory data causing it (single flashing lights) as there seems to be something the organism *adds* to the experience in order to create a "*meaningful whole*" – or "Gestalt" (Ash 1995; Asher 2003; Hergenhahn 1993). Gestaltists believe that this process of completion is part of the organism's quest for holism and thus presents a natural way of organising and structuring knowledge. Thereby, they suggest that all organisms apply a similar way of organising (every human is likely to see just one light). Wertheimer, Köhler and Koffka identified several laws according to which we organise and structure information (Koffka 1935; Köhler 1929). Gestalt theory is a needs-based approach (Doubrawa 2000) and individual needs are seen as figures that become visible in front of a ground and which have to be considered in their relation to the ground (Polster 2001). Thus, learning and the attention to certain stimuli always happens in relation to the existing context (the ground). In classroom, a Gestalt educator would emphasize *meaningfulness* and *understanding* of a subject as overall objective. Thereby, his/her role is to stimulate the organism's striving for completion and understanding. Gestalt educators would thus base their education mainly on the solving of problems and the targeted confrontation of learners with particular problems that create ambiguity and stimulate a problem solving process. To create a solution, learners would either seek new information or rearrange existing information (Hergenhahn 1993) which has certain parallels to Piaget's understanding of accommodation and assimilation. Bruner (1966) considers *curiosity* to be the prototype of intrinsic motivation and the major driving force for learning processes. "Our attention is attracted to something that is unclear, unfinished, or uncertain. We sustain our attention until the matter on hand becomes clear, finished, or certain" (Bruner 1966). Koffka drew further parallels to Piaget's work by considering early learning to be mostly 'sensorimotor learning' (Koffka 1922) – but in relation to a *consequence*, like keeping our hands away from fire after we got burned through touching a hot oven. Furthermore, in accordance with Bandura's principles, Koffka believed that learning happens through observation and imitation (Koffka 1935).

The teacher-learner relationship would be an ongoing exchange to accompany the process of recognizing structures and relationships and organizing the information into

meaningful patterns (Hergenhahn 1993; King 2005; Ormrod 1999). Based on these principles, Gestalt psychology had a continuous influence on cognitive psychology and its understanding of learning until today (Woldt 2005).

#### 2.3.4 Conclusion and educational implications

We may say that the cognitive paradigm contributed many ideas and assumptions on how we can help others to learn. Even though there are considerable variations from one cognitive theory to another and no real consensus on their categorization and boundaries, we may identify a number of general implications for learning across all cognitive approaches:

- Learning is influenced by cognitive processes that are controlled by the learner. Teachers should not rely on a direct stimulus – response reaction and anticipate or expect certain learning outcomes or behaviours, as learning does not necessarily translate into behaviour. Rather, the focus of education should be placed on the learner's cognitive *understanding* of the subject.

- In their development, children are increasingly capable of complex thought. A teacher should adapt the taught content, the level of complexity and also the level of language he/she uses to the learner's level of cognitive development.

- People organize the things they learn and relate new information to existing structures of organisation

Finally, teachers should make sure that the tasks, problems or experiences they expose the learner to, are based on his/her existing cognitive structures and previous learning, so that new information can be integrated and organised more easily. The major point of critique – usually voiced by behaviourist scholars – regards the complexity of cognitive structures and the difficulty of theorizing and simplifying ideas about these structures (Skinner 1950). Unlike the traditional cognitive view on learning as information processing, some of the cognitive theories consider learning rather as *constructed by the learner* on the basis of received information (Ormrod 1999). For example Tolman's concept of cognitive maps (late behaviourism) which is in accordance with gestalt

theory's focus on thinking and understanding, assumes that learning involves active construction of knowledge by the individual (construction of cognitive maps, insights and problem solutions) rather than purely absorbing information. But also Piaget's developmental concept suggests an active construction of cognitive structures by the individual. Already in 1937, he claimed that the cognitive structures we call knowledge are not a copy of reality but rather a result of adaptation (Piaget 1937). Furthermore, with his emphasis on social learning and the influence of social exchanges on knowledge creation, Lev Vygotsky's understanding of learning also has visible constructivist implications. The work of Piaget, Vygotsky, but also Jerome Bruner (Bruner 1966) and John Dewey (Dewey 1944) has been classified as cognitive constructivism and together they built the basis for the development of the constructivist learning paradigm (Tobias 2009).

### 2.4 Constructivism – The individual construction of knowledge

As opposed to the positivist principles of Behaviourism and Cognitivism, the constructivist learning paradigm takes a radically different position as it suggests that learners actively and autonomously construct their own reality. Constructivism developed out of the above described shift from understanding learning as information processing to learning as an *individual construction process*. Especially Bandura's theories on social learning and the work of developmentalist Jean Piaget were often classified as early and cognitive forms of constructivism (Mayer 1997; Tobias 2009) and positioned individuals as creators and constructors of their life through a continuously evolving and experience-based existence (Goodman 2008).

However, today there is a multitude of constructivist approaches and streams considered to be constructivist. Some scholars are worried about the exuberant use of the term (Gergen 1999) and the haziness in definitions of what is actually constructed. "So indeterminacy escalates as writers debate what it is that is being socially constructed (Hacking 1999) whether this be time (Fischer et al. 1997), meanings, identities, 'lived experiences' (Bruner 1990, Denzin 1997), the self (Gergen 1999) or social reality (Berger and Luckmann 1966)" (Fletcher 2006: 426). Today, constructivism is broadly recognized to have reached paradigm status (Kyrö 2005a; Loebler 2006). But just as with the

previous paradigms, the borders of constructivist theories are fuzzy, their basic assumptions can differ widely, and there is no definite consensus on its categorization (Prawat 1996; Spivey 1997).

This variety is based on the fact that constructivist reflections are not new and stem from various intellectual traditions and philosophies such as Dewey's pragmatism (Dewey 1933), Bruner's subjective construction of meaning (Bruner 1961), cognitivist assumptions on human intelligence (Piaget 1947; Vygotsky 1978) as well as symbolic interactionism and its interest in subjective meaning (Mead 1934, Blumer 1969, Goffman 1972). Historically, Glaserfeld argues for early constructivist traces in pre-socratic philosophers, but also sees traces in the work of David Hume, John Locke and George Berkeley (Glaserfeld 1996). Moreover, additional confusion is created through the interchangeably used terms of constructivism or constructionism, sometimes randomly pre-fixed with social (Fletcher 2006). Furthermore, humanism, considered by some to have reached paradigm status on its own (Hutterer 1998), will be presented as part of a wider constructivist understanding, as suggested by Kyrö (Kyrö 2005a; Loebler 2006). However, the major commonality of all constructivist theories presented below is their understanding of learning as *individually constructed* by the learner.

<i>Learning Theory</i>	<i>Major Scholar</i>	<i>Main assumption on learning</i>
Radical constructivism	Von GLASERFELD	Learning as individual construction of knowledge based on viable experiences
Social Constructivism / Critical Constructivism	GERGEN / FREIRE	Knowledge is constructed by the individual based on social interaction with the world and within a particular social & cultural context
Humanism	ROGERS	Learning as process of self-actualization and personal growth
Andragogy	KNOWLES	Adult learn differently; learning as autonomous and self-directed processes based on intrinsic motivation of the learner

**Table 4: Constructivist learning theories and major contributing scholars**

As indicated in the table above, this section introduces the major constructivist learning theories contrasting the radical forms of constructivism, represented by Glaserfeld (Glaserfeld 1996), with social forms of constructivism, mainly the reflections developed

by Gergen and Berger & Luckman (Berger 1967; Gergen 1999) and those of Paolo Freire (Freire 1998). This is followed by a discussion about the major humanist influences (Rogers 1961) and the development of theories on adult learning (Knowles 1970).

#### 2.4.1 Constructivist learning theory – Social and radical forms

Today, there exists a multitude of constructivist approaches and theories. However, we may distinguish two larger forms of constructivism – radical and social forms of constructivism.

Starting with the first, Ernst von Glaserfeld (1917-2010), together with Heinz von Foerster (1911-2002) is considered to be the founder of *Radical Constructivism*. Glaserfeld defines radical constructivism as “(...) the assumption that knowledge, no matter how it is defined, is in the heads of persons, and that the thinking subject has no alternative but to construct what he or she knows on the basis of his or her own experience” (Glaserfeld 1996). From a radical constructivist perspective knowledge exists only *within* the individual and the thinking and reflecting subject can only construct its knowledge on the basis of the *experiences* he/she made. Constructivism is not a new perspective and Glaserfeld himself locates the first constructivist ideas in the early 18<sup>th</sup> century to the Italian philosopher Giambattista Vico (Glaserfeld 1989; Tobias 2009). The essential difference between cognitive and behaviourist theories lies in the assumption that humans not only actively construct knowledge, but that they construct *their own reality* and life-world and that there is no reality existing independently from the individual’s mind (Foerster 1992; Glaserfeld 1992; Kukla 2000).

A characteristic of radical forms of constructivism is the definition of the human organism as a closed cognitive system creating and developing its own cognitive structures (Hejl 1992; Schmidt 2003). This assumption is in line with the work of Maturana and Varela (Maturana 1980) who suggest that organisms or living systems in general are energetically open to their environment but that there is a functional and informational closure (Maturana 1980). Thereby, *cognition* is understood as part of the functionally closed system that serves to organise experiences of the subject but not to discover a reality that is independent from the subject. This operational closure of the organism is considered to be a basic principle of organization which makes cognition a

*constructive* process inside the organism existing without external input (Glaserfeld 1992; Hejl 1992).

Out of this argument emerged a social form of constructivism mainly developed by Gergen (1999) and Berger and Luckmann (Berger 1967) and primarily based on the cognitive constructivism of Vygotsky (1978) and Bruner (1966; 1961). Social and Radical Constructivism share the belief that we actively construct our knowledge about the self and the world. What separates them is their understanding of the nature of that knowledge (Westenmeyer 1999). While radical constructivism claims that knowledge is bound to the constructing subject and that organisms are operationally closed (Glaserfeld 1996; Schmidt 2003), social constructivism is in its essence a *social* theory of learning and considers any kind of experience and knowledge construction to be bound into a social context and thus to be *socially created* (Gergen 1999; McNamee 1999; Zielke 2003). Referring to Gergen (Gergen 1999) Fletcher (Fletcher 2006) defines social constructivism as “more concerned with how individuals mentally construct their worlds with categories supplied by social relationship”. Frindte (Frindte 1998) exemplifies it by contrasting the terms “I think, therefore I am” as opposed to “I communicate therefore I am”; and Westenmeyer (Westenmeyer 1999) declares the social dimension of knowledge construction as the truly innovative aspect of the learning theory.

Still, the principles of learning in all constructivist theories have a common ground in that they are based in the work of Piaget (Piaget 1937, 1947) that was taken up by Glaserfeld. Learning is explained by Piaget’s principles of *accommodation* and *equilibration*. Piaget argues that learning is a process of developing/adapting cognitive patterns and meaning schemes that individuals hold about the world. Whenever our actions do not lead to the results we expect, based on our schemes about comparable situations, we experience cognitive perturbation. This perturbation is balanced (equilibration) through the adaptation of our meaning schemes – a process called accommodation (Glaserfeld 1996; Piaget 1947).

Thereby, the important difference to positivist positions such as Behaviourism and Cognitivism is the assumption that we do not adapt mental schemes to an objective truth out there, but we adapt our cognitive construction of the world so that it fits our environment and allows us to make *viable* experiences (Glaserfeld 1996). “Once we allow



knowledge to "fit" reality the way a key fits a lock, we find ourselves in a very different position because many keys, with different shapes, can open a given lock" (Bodner 1986). Thereby, viable experiences maintain or install equilibration; they help us navigate through our life and are thus coherent with our meaning schemes. Or as Bodner puts it: "Knowledge is good if and when it works, if and when it allows us to achieve our goals" (Bodner 1986:874).

Constructivism argues that education should initiate independent and critical reflections (Burr 1995; Loebler 2006; McNamee 1999). This argument was particularly emphasized through the school of critical constructivism mainly developed by Paulo Freire (1921-1997) and is very close to social constructivism (Herman 2009). Critical constructivism is based on principles of democracy and humanism (Freire 1998) to bring change to society. "Critical constructivists believe that their students can acquire the knowledge necessary to lead productive and satisfying lives" (Goodman 2008:29). Thereby, *awareness* is a central concept. It is the complete process in which critical *consciousness* and *intervening action* in the world are dialectically combined (Dauber 2009). In the classroom, Freire suggests to apply the problem-posing-concept (Brown 2005b). Thereby, learners are asked to identify problems in order to develop their capacity to critically recognize and describe a problem. Thereby, cognitive consciousness of a problem (verbalising) needs to result into *action* (actionism) to be efficient (Brown 2005b; Dauber 2009; Freire 1998).

Both social and critical constructivism call for authentic learning experiences: experiences in the world outside classroom; but also experiences that affect the immediate life of learners (Goodman 2008). Thus, discussions and activities may for example integrate external visitors from organisations, institutions or businesses; or they may simply be held outside school (Gergen 1999). Social constructivism promotes an education which is open to individual and multiple perspectives to an issue, and which allows learners to choose their own preferred learning style (Gergen 1999; Herman 2009).

However, all forms of constructivism share certain implications for classroom education. Constructivism is often associated with pedagogic approaches that promote experiential learning. The assumption that learning is an active construction process of the learner usually excludes classical teaching approaches. In general, constructivism prefers interactive teaching methods and dialogue over traditional teaching and monologues.

However, Constructivism does not suggest one particular pedagogical approach either as there is no one best way to do or learn something but the way that each individual chooses. In general, the role of the teacher would be to provide a learning environment which allows experiential forms of learning to take place and the making of viable experiences by the learner. Glaserfeld openly criticizes behaviouristic reinforcement principles in classroom because these aim at achieving a certain performance and hinder all forms of independent thinking. He disapproves of the idea that the objective of learning is to pass an exam and respond to pre-defined objectives as opposed to learning for developing one's intellectual capacity (Glaserfeld 1998:285). Constructivism does not provide new instructions for education but can help teachers to understand why certain attitudes and procedures are fruitless and even counterproductive. Constructivist theory in that sense should be understood as encouragement and motivation for teachers to use their own creative intuition.

Social constructivism in particular, emphasizes discussion and debate, with the teacher but also amongst peers (Herman and Gomez 2009; Tobias 2009). Herman and Gomez (2009) draw attention to the importance of the various social dynamics that arise in classroom. They state that the efficiency of learning depends on the level of discussions amongst peers as well as on the level of individual guidance by the lecturer.

### 2.4.2 Humanism – Learning for personal growth and development

Initially, the humanist psychology developed as some sort of counter perspective to the behaviourist view (Hutterer 1998). Its major scholars were Abraham Maslow (1908-1970) (Maslow 1954) and Gordon W. Allport (1897-1967) (Allport 1950) who have been educated in the behaviourist school. For some scholars, humanism has reached paradigm level (Bürmann 1997; DeCarvalho 1991; Hutterer 1998; Ormrod 1999), while others locate it on a meta-theory level within constructivism but admitting its strong and wide-reaching influences (Kyrö 2005a; Loebler 2006). However, there is general agreement on the idea that humanism considers learning to be an active construction process of the learner and thus possesses some general constructivist implications (Dauber 2009; Kyrö 2005a; Sweller 2009). Herman (Herman 1995) emphasizes the compatibility of both approaches by identifying ways how humanistic principles may contribute to develop

constructivist learning theory. The central argument of the humanistic theory is that behaviour must always be put in the *context of the organism* that is determined by feelings, emotions and needs of the individual (Maslow 1954) and that people are proactive, determined, and self-responsible beings (DeCarvalho 1991; Rogers 1961).

Humanist pedagogy aims at educating autonomous learners (Dauber 2009). Those are considered to emerge through the freedom of choosing their own learning objectives (Dauber 1997; Perls 1951). Learning itself is considered to be an easy and rapid process if only the learned subject corresponds to the learner's individual objectives (Gorz 1976; Rogers 1969). A central term of humanistic pedagogy thus is "personally meaningful learning" (Dauber 1997). Humanist pedagogy thus faces *relational* challenges and classroom practices should focus on the development of imagination, emotional and experiential abilities (Perls 1951). The teacher is seen as a "*facilitator*" and his/her role is to create appropriate circumstances stimulating the desire to learn, discover and expand their knowledge (Rogers 1969). Furthermore, Rogers believes that learning which challenges the perception of the self and the world, can only happen when external threats are minimized (Rogers 1969). The facilitator deals with intellectual, but also with emotional contributions of learners and tries to establish an atmosphere of mutual respect where he/she can become an equally accepted member who holds just one attitude out of several (Rogers 1969). Hayes (2006) on the contrary describes the general tendency towards , "personalized learning" as a buzz phrase and argues that the more learning is personalized, the less it is educational. Furthermore, he addresses the emergence of learning styles (Coffield 2004) as a further fashionable approach and claims that most of the diagnostic instruments to identify a learning style are neither valid nor reliable. Both Hayes and Bookchin (Bookchin 1995; Hayes 2006) claim that what education and teachers lack today is confidence in human potential.

### 2.4.3 Theories of adult learning – The autonomous learner

Theories of adult learning have mainly developed out of adult education in the 1970's and build in various ways on the reflections of constructivist, humanist and late cognitivist perspectives. They are based on the assumption that there is something particular about the way adults learn as pointed out by developmental theories such as Piaget's or Vygotsky's work (Tusting 2006). Some of the early works on adult learning include Kidd's "How Adults learn" (Kidd 1978), Houle's "The Design of Education" (Houle 1972) and above all Malcolm Knowles various publications (Knowles 2005; Knowles 1970, 1985) on adult learning.

A comprehensive overview of models and theories of adult learning can be found in Tusting, Jarvis (Jarvis 1987; Tusting 2006) and also Tight (1996). The major contributions according to Tusting (2006) and their theoretical background are summarized below.

<i>Model of adult learning</i>	<i>Major contributing scholar(s)</i>	<i>Understanding of learning</i>	<i>Links to scholars /Foundation in learning theory</i>
Andragogy	KNOWLES (1985)	Learning should be based on adult's intrinsic motivation for personal growth and development	Humanistic theories of personal development (Rogers / Maslow)
Self-directed learning	TOUGH (1979)	Consider intrinsic motivation of learners and respect capability for autonomous and self-directed learning	Humanistic theories
Informal learning	COFFIELD (2000)	Awareness of learning to happen inside and outside classroom; considering incidental and unplanned learning	Overlapping with self-directed learning; based on humanistic theories
Reflective and experiential models	DEWEY (1933) KOLB (1984)	Reflective and experiential learning is finding solutions to real world problems; integration of multiple learning styles into ongoing process	Cognitive Constructivism / Critical Constructivism
Learning how to learn	SMITH (1983)	Adult learning needs to include space for discussion and reflection on learning experiences and possibilities for improvement	Larger constructivist understanding / Cognitive Constructivism
Transformative Learning	MEZIROW (1981)	Focus on critical reflection on experiences to achieve learning as profound transformation of perspectives	Humanism / Critical Constructivism

**Table 5: Models of adult learning and their theoretical background**

All models of adult learning are based on the assumption that adults learn differently from children. They build on the constructivist assumptions that learners actively gain knowledge based on intrinsic motivation and most of them are inspired by the humanist

idea that learning is a process of self-actualization and growth and thus based on intrinsic motivation (Knowles 2005; Knowles 1985; Ormrod 1999; Tusting 2006). Models of adult learning are intrinsically social and models of *self-directed learning* suggest that self-directedness emerges as part of the social context of adult learners (Tough 1979). Models on *learning how to learn* focus on the importance of providing space for reflection and discussion of learning processes and taught subjects in addition to the pure teaching itself (Smith 1983). Theory on *informal and incidental learning* draws attention to the omnipresence of learning processes potentially happening inside and outside classroom and views this as additional resource (Coffield 2000). Models of *reflective and experiential learning* underline the relevancy of real life problems and issues to initiate learning processes (Kolb 1984) and point out the uniqueness of each learner's attention and reflection processes (Dewey 1933). Reflection also plays an essential role in Mezirow's theory of transformative learning (Mezirow 1991; Mezirow 1990) and he identifies critical reflection on experiences (critical incidents) as basis for transformative learning which he identifies as a profound change in perspective. However, Mezirow does not consider the social or cultural context as a possibility or restriction for transformative learning (Tusting 2006) as opposed to Paulo Freire's reflections on critical pedagogy where learning needs necessarily emerge from the social, cultural and historical context of the individual (Freire 1974, 1998).

A comprehensive critique of adult learning literature can be found in Edwards (1996), Tusting (2006) and also Jarvis (1987). Some publications argue against the idea that adult learning is necessarily different and suggest the development of a more profound understanding of the specific cultural and social context learning is based on (Edwards 1996). "Richer forms of analysis may lie in the specific examination of the characteristics of specific individuals and their contexts with regard to what they are learning , the setting in which they learn and the relationship with those peers and tutors with whom they learn" (Hanson 1996). She argues against "all embracing" theories of adult learning and suggests incorporating differing strategies to enable learning for a variety of personalities in a variety of settings and contexts. Thus, it is suggested reflections on adult learning should focus less on identifying one right model of adult learning, but should seek to understand how learning can be enabled in the particular *context* of each learner's situation. Thereby, Tusting suggests that practical issues like time, financial

resources and child care should also be considered in identifying how and to what extent a learner is able to engage in the learning process (2006).

Finally, management education has addressed the issue of learning in a *context of rapid change* which bridges reflections on adult learning theory to the needs of entrepreneurship education as the major challenge of the latter is considered to be a business environment of rapid change and development (Gibb 2002; Kyrö 2005b; Neck and Greene 2011). These models consider the social setting in which learning takes place. Tight (1996) addresses the concept of the learning organization as a response to a rapidly changing environment and explores how businesses can survive in a context of constant change and development. These models all argue for flexible approaches to adult education, where the focus is on the learner's (here the employee's and/or entrepreneur's) own contexts and practices and require constant learning (Vaill 1996).

### 2.4.4 Critique and conclusion on constructivist learning theories

Constructivist principles and especially those of radical constructivism have encountered considerable critique (Sweller 2009). Kukla (Kukla 2000) and also Unger (Unger 2005) provide a comprehensive overview of the constructivist debate and its philosophical and sociological strengths and weaknesses. Also Phillips (Phillips 1995) takes a very critical view entitling constructivism as a "powerful folktale about the origins of human knowledge" (Phillips 1995:5), and criticizing the sect-character of the many streams and initiatives naming themselves constructivist.

The main point of critique usually relates to the constructivist epistemology and the idea that realities are individually constructed as opposed to the established notion of what constitutes a science. However, Gergen emphasizes that social constructionists don't say that "nothing exists", nor do they say that "reality does not exist". The point they are making is that every time people define what "reality" is, they speak on the basis of a cultural tradition. So, whatever they think of or talk about, it can only be described on the basis of a cultural perspective, and is based on a certain language or visual or oral media (Gergen 1999).

The major debate between constructivists' traditional learning theories typically examines the level of instruction and guidance to be provided by the teacher (Herman 2009; Tobias 2009). While traditional learning theory argue for a high level of control and guidance, constructivist theories deny the possibility to control or measure learning as they believe that teachers cannot access an individual's mind. However, social and critical constructivists claim that teachers can rely on *communication* to gain a verbally expressed snapshot of the learner's current reflections.

At the same time, Sweller (2009) claims that there are many aspects about constructivism that are indisputable. "For example, we surely must construct mental representations of the external world that we can use to function in this world. In that sense, all learning is essentially constructivist and I am not aware of any theorist who objects to this characterization of learning" (Sweller 2009:127). However, Sweller argues against the problem-based learning approach of constructivist educators, who believe that knowledge gained through individual search for it is worth more than knowledge readily presented to learners as in classical teaching approaches. Duffy and Jonassen perceive constructivism as a bridge to traditional learning theory and a possibility to respond to new learning demands. "Traditional models of learning and instruction emphasized forms of mastering the information in a content domain (...). However, it is simply no longer possible (there is too much) or even reasonable (it changes too rapidly) to master most content domains" (1992: ix). They were trying to identify useful implications of constructivist theories for the design of instruction in classroom education and thus tried to enrich classical teaching approaches through constructivist principles. In 2009, Thomas and Duffy conclude that since 1992 little has been done to further develop reflections on constructivist instruction (Tobias 2009). They identify constructivism as a "philosophical framework" rather than a theory "that neither allows us to precisely describe instruction or prescribe design strategies" (Tobias 2009:4).

<i>Learning Theory</i>	<i>Major Scholars</i>	<i>Main assumption on learning</i>	<i>Implications for education</i>	<i>Links to other scholars</i>
Radical constructivism	VON GLASER-FELD	Learning as individual construction of knowledge and reality	Learners identify their needs / Objective is to make viable experiences	Inspired by Piaget for cognitive development / Maturana & Varela for understanding of organism
Critical Constructivism	FREIRE	Learning as realizing and acting on individual learning needs	Learners need authentic experiences and personal connectedness (Goodman:29)	Humanist principles (Rogers)/ Close to social constructivism, especially regarding education / adds to adult learning theories
Social Constructivism	GERGEN	Construction of knowledge through social interaction with world	Learners need possibility to socially connect to peers, educators and world outside classroom	Constructivist implications; overlapping with critical constructivism
Humanism	ROGERS	Learning as a process of self-actualization, personal growth and development	Autonomy and independent thinking	Strong social implications, close to critical constructivism / linked work of Rogers and Freire
Adult learning	KNOWLES	Learning as intrinsically social; based on inner motivation and strive for personal development	Education of autonomous and self-directed learners	Builds on humanist, cognitive and critical constructivist theories

**Table 6: Overview of constructivist learning theories and their implications for education**

The chapter concludes with the assumption that constructivist learning theories and the idea that learners actively construct their learning experiences seems to correspond to modern views of learning and moreover responds to the demands of a rapidly changing environment, where it does not matter *what* learners know but *how* they are capable to identify and react on learning needs. These qualities are all the more needed in a business and especially entrepreneurship context. The subsequent chapter will explore how the implications of the constructivist paradigm contribute to understanding and responding to the needs of entrepreneurship education in a university context.



### 3. ENTREPRENEURSHIP AND ENTREPRENEURIAL LEARNING

This chapter explores the nature and processes of entrepreneurial learning and teaching in the university context. It argues that entrepreneurial education is more complex than other business topics. In part, this is because of the multiplex nature of what we know about entrepreneurship, such that the content and processes elude a simple pedagogy (Gorman and Hanlon 1997). The issue of what we teach as entrepreneurship is also manifest in how we can, and how we should teach entrepreneurship (Blenker 2006). One response has been a shift to constructionist perspectives where learning is seen as an active process of constructing rather than merely acquiring knowledge (Kyrö 2005a; Loebler 2006). But herein also lies the research problem. If learning is a social construction process based on existing entrepreneurship experience, how may learners of entrepreneurship who have not started or run a business yet, “construct” useful entrepreneurial knowledge?

To address this issue, the chapter begins by examining the development of entrepreneurship education and the problems associated with enterprise education in universities. It then takes a closer look at how the issues surrounding the multifaceted and complex nature of entrepreneurship have been addressed, and how this compares with the typical experiential learning of the entrepreneurial practitioner (Krueger 2007). The issue is discussed in the context of higher education and the institutions’ role as creator and disseminator of higher level knowledge (Izquierdo 2008).

In a next step, the review discusses how and to what extent the previously introduced learning paradigms contribute to understanding and stimulating entrepreneurial learning. Constructivism is identified as a radically different ontological approach, with seemingly convincing perspectives about learning for enterprise but with problematic implications for students without previous experiences from which they could construct knowledge.

### 3.1 What is entrepreneurship?

Today, it is generally acknowledged that the nature of entrepreneurship is complex, chaotic, and lacks any notion of linearity (Neck and Greene 2011). Its increasing complexity is based on a rapidly changing business environment leading to a highly unpredictable nature of the entrepreneurial process (Gibb 2005; Read et al.2009; Sarasvathy 2008).

The complexity of entrepreneurship is reinforced by the nature of the entrepreneurial process itself which is constantly shaped and co-created by social interactions. Sarasvathy and Venkatamaran (2011) put it as follows. "For example, there is mounting empirical evidence that opportunities are often created by the entrepreneurial process itself—in other words, entrepreneurs and their stakeholders often end up co-creating new opportunities that neither they nor those of us in their immediate periphery could or did anticipate" (Sarasvathy and Venkatamaran2011: 118). Thereby Sarasvathy's theory of effectuation is identified as a heuristics to deal with uncertainty in an entrepreneurial context. It acknowledges the unpredictability of the future and rather than focusing on pre-defined goals it focuses instead on the present situation and resources which are readily available (e.g. Sarasvathy 2008). Referring to effectual processes, Fayolle and Toutain (2009) depict the entrepreneur as 'tinkerer' coping creatively and flexibly with complex situations.

Furthermore, Sarasvathy and Venkatamaran point out the danger of falling into a category error (Ryle 1949) by limiting entrepreneurship to being a sub-discipline of economics or scientific field of study. They suggest to reformulate entrepreneurship as "(...) a method of human action, comparable to social forces such as democracy and the scientific method, namely, a powerful way of tackling large and abiding problems at the heart of advancing our species." (Sarasvathy and Venkatamaran 2011:130). The complexity of entrepreneurship thus also lies in its wide-reaching nature across disciplines encompassing pedagogy, policy, and practice in ways that are yet to be invented (ibid.). This is in line with Gibb (2005) who suggests that "(...) this will be a world of much greater uncertainty and complexity demanding entrepreneurial behaviour at all levels" (Gibb 2005:51). Also Shepherd et al. (2008) state that the fast-moving global economy requires even managers to have an entrepreneurial mind-set and entrepreneurial qualities are considered to be a multidisciplinary need to cope with a

situation of unpredictable change (Gibb 2005; Hynes 1996). In an earlier work, also Shepherd and Douglas pointed out to what extent entrepreneurship is characterized by extraordinary uncertainty and ambiguity (Shepherd 1997). Gilbert and Eyring (2010) discuss the high risk environment of entrepreneurship of which uncertainty is an inherent part, by stating that the key task of emerging businesses is to identify the most important uncertainties.

Furthermore, entrepreneurship is not a static term but considered to be an ongoing process (Fletcher 2006; Rae 2007). Johannisson names this process "entrepreneurship" – an emerging practice-theory approach with phronesis (practical wisdom) as guiding intellectual virtue (Johannisson 2011).

What further constitutes entrepreneurship is that it is embedded in multiple contexts which makes it a non-linear and dynamic phenomenon. Johannisson et al. (Johannisson et al. 2002) showed how entrepreneurship is associated with anomalies and irrationality. They argue that entrepreneurial venturing is reflected in the multiple social constructions in which individual and collective forces interplay. These constructs are complex (Drakopoulou-Dodd 2001) and represent a synthesis of the entrepreneurial self and circumstance (Anderson 2000; Welter and Smallbone 2011). Anderson (2000) argues that entrepreneurship is protean in that it takes its shape from the dynamics of the individual fitting themselves into their perception of the socio-economic context (Anderson 2000; Jack and Anderson 2002). Welter and Smallbone (2011) describe how the institutional context influences on the entrepreneur and how in return entrepreneurial values influence on institutional change.

Entrepreneurship can thus be identified as a highly complex phenomenon characterized by extraordinary uncertainty and embedded into and shaped by multiple social contexts. This implies a perception of entrepreneurship beyond its definition as "business-like" (Gibb 2005: 46) in the formal administrative sense. "Entrepreneurship is thus defined in terms of a set of behaviours, attributes and skills that allow individuals and groups to create change and innovation in all aspects of their life" (ibid: 46). The definition of entrepreneurship in this sense comprises more than a start-up activity, but includes all kinds of actions that foster the creation of something new, independent from the

creators position as entrepreneur or as being part of an enterprise – as a so-called intrapreneur, and in addition even independent from the business context at all.

#### *Entrepreneurship as polysemous*

Another reason why entrepreneurship is so difficult to define is because even the word “entrepreneurship” is polysemous (Fayolle 2008). Defining entrepreneurship embraces behaviours, attributes and skills exhibited at all organisational levels and contexts (Gibb 2005). Also Solomon (2007) and Anderson and Jack (2008) argue that mastering the entrepreneurial process requires myriad talents, skills and knowledge.

The most frequently attributed *behaviours* are creative problem solving, autonomous behaviour, pro-active approaches, and the recognition of opportunities (Shaver and Scott 1991). In an extensive review, Caird (1988) explores entrepreneurial *attributes* and mentions achievement orientation, perseverance, self-confidence, autonomy, determination and creativity as some of the most essential attributes. Olson and Bosserman (Olson and Bosserman 1984) suggest the combination of three attributes: the orientation towards effectiveness; the ability to think intuitively *and* rationally; and the motivation to perform an entrepreneurial process as driving force behind any entrepreneurial action. More recently, scholars talk of *attributes* such as autonomy, creativity, innovation, risk-taking, or the act of venture creation (Olson and Bosserman 1984). Based on Kant’s principles of enlightenment, Clarke and Holt (2010) relate entrepreneurship to a state of personal maturity based on independence and autonomy. Smith et al. (2007) argue that entrepreneurial activities require a broad array of *skills*. They examine a set of 17 skills which they categorize in technical skills, managerial skills, entrepreneurial skills, and also personal maturity skills. They identify 9 out of these 17 skills to be particularly useful and important. Those are operational, management, financial, accountability, marketing/Sales, business concept, creativity, environmental scanning skills, and skills in supplies/raw materials.

Others argue that the meaning of entrepreneurship is also shaped by *who* is asking and is thus co-defined by the perspective of those talking about it (Drakopoulou-Dodd 2001; Fayolle 2006; Jack and Anderson 2002). But it is also shaped by *why* people are asking,

relating to intention and purpose of entrepreneurship (Anderson and Smith 2007; Korsgaard and Anderson 2011).

Moreover entrepreneurship is even harder to explain because it is considered to be a *transformative condition* (Anderson and Starnawska 2008). "When we talk of entrepreneurship, we treat it as a noun, an objective thing; when we talk of entrepreneurs, we treat them as in a state of being – *she is an entrepreneur.*" (Anderson and Starnawska, 2008:221). Entrepreneurship is seen a process of creating, not a thing in itself and thus no definition could provide a complete accurate account of what it is. Entrepreneurship thus relates to the *process* of becoming, thinking, planning, conspiring, and doing the things that lead to entrepreneurship as well as the skills necessary to enact these practices (Pyysiäinen 2006).

Moreover, given the strength of the evidence of how entrepreneurship involves networked individuals and the networking of individuals, it seems difficult to conceive of entrepreneurship as the isolated act of an individual (Dodd and Anderson 2007; Fletcher 2006; Rae 2006). Minniti (2005) suggests we must include the milieu that supports, drives, produces and receives the entrepreneurial process and Thornton et al. (Thornton et al. 2011) stress the influence of the socio-cultural factors on the entrepreneurial activity. Indeed, Korsgaard and Anderson (2011) argue that entrepreneurship is as much a social as an economic phenomenon.

We may conclude entrepreneurship to be a highly complex, socially created, procedural and fluid phenomenon that is to be considered in its specific cultural and social context. In this multifaceted complexity lies the challenge of teaching the discipline which will lead to unique pedagogies (Anderson and Jack 2008; Solomon 2007).

#### 3.2 Development of entrepreneurship education

The education of entrepreneurship is no longer a recent development. Since the year 1947 when Myles Mace held the first entrepreneurship course at Harvard University (Katz 2003), many entrepreneurship courses and programmes have been developed and implemented all over the world. In 2000, Charney and Libecap (2000) stated in a study that the number of entrepreneurship education programmes has since increased to more than 1,500 and it is already impossible to give an extensive overview of the

entrepreneurship education literature. While in 1991 a survey of Robinson and Haynes (Robinson and Haynes 1991) confirmed that the educational offer is widely spread, it was still identified to be underdeveloped. One decade later, Solomon et al. (Solomon 2002; Solomon 2007) provide an extensive overview of the development at American two-year and four-year colleges and universities based on several nationwide studies and literature reviews between 1979 and 2005. The results of their latest study in 2004/2005 state that besides a continuous increase in number and diversity of programmes, previously identified trends have further gone into that direction. Especially the use of technology has dramatically increased (Solomon 2007).

Kuratko (2005) defines entrepreneurship to have become "the most potent economic force the world has ever experienced" (Kuratko 2005:577) and emphasizes the increase in entrepreneurship education programmes as a response to the "entrepreneurial revolution" of the past decades and especially the enormous increase in small and medium sized businesses. Katz (Katz 2003) provides a chronological overview of the growth of the discipline regarding the course offer, the supplemental infrastructure of education and the development of publications. He concludes that in America the field reaches a certain maturity and a shortage of faculty might be a future challenge, while further growth of the discipline will take place outside business schools and outside America. Covering a sample of 3000 higher education institutions in 31 European countries, a study initiated by the European Commission provides insight about current level of integration of entrepreneurship education across the EU countries (NIRAS Consultants, FORA, ECON Pöyry 2008). Even though a focus on implementing and promoting entrepreneurship education across Europe, the current state of entrepreneurial learning opportunities is described as "worrisome" and the survey results suggest that "more than half of Europe's students at the higher educational level do not even have access to entrepreneurial education" and that this access usually is limited to business schools or multidisciplinary institutions that incorporate a business department. Klandt (Klandt 2004) confirms a positive growth and development of the discipline in German-speaking Europe that qualifies both business founders and academic & practical business formation experts, but also calls for a more interdisciplinary research approach. Examining the offer of programmes in France, Fayolle (Fayolle 2000) confirms a lack of

interdisciplinary programmes, a one-sided focus on business schools, as well as a weak academic recognition of the discipline.

Obviously, the interest in entrepreneurship as an academic discipline has rapidly grown throughout the past decades. And while many scholars are positive that universities and education institutions will be able to cope with the growing demand, Solomon states that “the dilemma is not that demand is high but that the pedagogy selected meets the new innovative and creative mindset of students”(Solomon 2002). There is serious concern about the quality of the offer and its capability to prepare for the complex nature of the discipline (Gibb 2002, 2005; Neck and Greene 2011). Katz (Katz 2008) points to the convergence in the content of entrepreneurship courses and texts, but argues that there is little insight into pedagogic processes. As opposed to Kuratko (2005), Katz argues that entrepreneurship is a fully mature discipline but agrees that it is not fully legitimate yet.

In the early 1990s, the conceptual focus was still laid on the development of a business plan (Ronstadt 1985b) which is under increasing criticism for its limiting and inflexible character (Honig 2004). At the same period, a methodological focus on case studies and lectures, concentrating on content rather than on learning, was stated by Béchard and Toulouse (Béchard and Grégoire 2005; Béchard and Toulouse 1991); while the need to focus on entrepreneurial learning and the learning individual was identified long ago (Ronstadt 1985b).

Still today, entrepreneurship education seems to be widely based on business planning courses (Béchard and Grégoire 2005; Carrier 2007; Solomon 2002). But even though the use of business planning and traditional teaching forms is still widespread and popular, Solomon et al. identified in their latest study a shift from traditional teaching approaches to a more frequent use of guest speakers, discussion and other more knowledge-*sharing* forms of education (Solomon 2007). Many others still call for innovative and more creative pedagogical approaches to stimulating entrepreneurial learning and a solid research approach to identifying an appropriate learning theory (Binks et al. 2006; Gibb 2002). Plaschka and Welsch (1990) state that many programmes evolved on a trial and error basis, or based on identified needs through feedback on deficiencies, gaps, and difficulties in the courses. They recommend an increased focus on entrepreneurial education and more reality and *experientially-based* pedagogies such as those recommended by Porter and McKibbin (Porter 1988).

### 3.3 The challenge of teaching and learning entrepreneurship

Anderson argues that entrepreneurship *is* an enactment of a future reality (Anderson 2005). This future arguably is seen as “a world of much greater uncertainty and complexity demanding entrepreneurial behaviour at all levels” (Gibb 2005:51). This is widely acknowledged today and expressed in numerous political and governmental measures to stimulate an entrepreneurial culture (Commission 2000, 2006; OECD 1989; Westall 1998).

As argued above, entrepreneurship education is not a recent discipline anymore and the educational offer is rapidly growing. However, there has been a lot of debate on whether entrepreneurship can be taught at all (Fiet 2001a; Henry 2005; Ronstadt 1985a).

It is now generally accepted that the nature of entrepreneurship, especially its complexity, variability and contingency, makes it a difficult topic to teach (Gibb, 2002). Kuratko (Kuratko 2005) argues that entrepreneurship can be taught but that education needs to deal with the challenges of its complexity. Pittaway and Cope (Pittaway and Cope 2007) support this argument and found that entrepreneurship education impacts on propensity and intentionality of learners, while pointing out the lack of consensus on what entrepreneurship or enterprise education actually is when implemented in practice. This is confirmed by Henry et al (2005), who reflect on Fiet’s classic question about whether entrepreneurship can actually be taught (Fiet 2001a; Fiet 2001b) and point out a prior issue, that it is not yet entirely clear *what* we should be teaching. It seems then that what is known about entrepreneurship, and what should be taught about it, is a multifaceted phenomenon.

Rasmussen and Sorheim explain that “the term entrepreneurship education can be interpreted in two ways; either learning about entrepreneurship as a phenomenon, or learning useful skills in order to become an entrepreneur”(Rasmussen and Sorheim 2006). They identify the latter as general stimulation of entrepreneurship and generally argue for an action-based approach to understanding entrepreneurship from the insight rather than learning about it. Indeed, Blenker et al. argue that there is a noticeable tendency to educate *for* entrepreneurship rather than *about* it (Blenker 2006). Learning



entrepreneurship is thus more than simply "telling" or even reading about it – it is related to actively preparing for an entrepreneurial practice, whereby learners need to actively engage in this process.

Furthermore, preparing *for* the challenges of entrepreneurship is inextricably linked to the idea that entrepreneurial learning in many ways is considered to be a *social* learning process (Fletcher 2006; Gibb 2002; Jack et al. 2004; Loebler 2006; Rae 2006). Jack et al. (2004) argue that entrepreneurship is socially enacted and embedded into networks. They identify family, business contacts, suppliers, competitors and customers as social categories that provide a particular support to the entrepreneur and that can enhance the entrepreneurial performance. Also Taylor and Thorpe (2004) as well as Rae (Rae 2007) claim that entrepreneurial learning is a social learning process, whereby Rae suggests that it emerges from the combination of three major themes; personal and social emergence, learning from context, and from the enacted entrepreneurial practice itself.

Solomon argues against the findings of prior research that entrepreneurial characteristics are innate and points out that recent findings support the idea that "psychological attributes can be culturally and experientially acquired" (Solomon 2002). But just as attitudes may be socially constructed, they may as well be socially suppressed, and Loebler (2006) states that there are hints that formal education does not stimulate entrepreneurial competencies and perhaps even suppresses entrepreneurial attitudes.

Minniti and Bygrave (2001) provide a model of entrepreneurial learning that is based on the way we deal with successful and unsuccessful experiences. They argue that entrepreneurs learn by updating a subjective stock of knowledge accumulated on the basis of past experiences. "Entrepreneurs process information, make mistakes, update their decisional algorithms and, possibly, through this struggle, improve their performance" (Minniti and Bygrave 2001).

Ronstadt (1985b) goes on to argue that teaching entrepreneurship is about more than the sum of the functional subdivisions of modern business education and that teaching entrepreneurship is different from any other discipline. It is a practice that deals with the unknown and the uncertain and learners need to set their own, individual goals within this environment (Loebler 2006). Ronstadt concludes "that the entrepreneurial

environment for the vast majority of our graduates will be an extremely unstructured and highly individual experience" (Ronstadt 1985a). Also Neck and Greene (2011) propose that entrepreneurship education has to reach beyond the "known world" and deal with the uncertainties and contingencies that will arise in the unknown. They emphasize the entrepreneur as the central figure in the emerging stages of the business, which is why entrepreneurship education today considers the "*soft-stuff*" like living with uncertainty, opportunity identification, entrepreneurial mindset, creating, decision-making, developing empathy, business design, culture, life-work balance, social responsibility, and leveraging failure (Neck and Greene 2011:56).

Jack and Anderson (2008) address the challenge of entrepreneurship education to be more than an academic discipline and describe it as art *and* science, as it ranges from "a science of business management to the necessarily imprecise notions of creativity". Béchard and Grégoire (2005) and Fayolle and Gailly (2008) see both craft and science.

Löbler points out the importance of educating for criticality as prerequisite for innovation and the creation of new knowledge, thus a form of 'creative destruction' in a Schumpeterian sense. He states that to "support creative destructions a bundle of competencies, skills and characteristics is needed" (Loebler 2006). Referring to Glaserfeld (2000) he (Loebler 2006) argues that all teachers would agree 'that the deeper purpose of school is to foster independent thinking'. This implies that entrepreneurship education cannot be compared to disciplines where certain behaviours and processes must be trained and replicated, like for doctors or engineers (Chorey and Anderson 2006). Considering the complexity of the discipline, the education of entrepreneurship cannot aim at pure knowledge transfer but relates to the above mentioned idea that entrepreneurship is attributed to certain behaviours, transferable skills, but also attitudes and mindsets all of which are embedded into and enacted within a social context. Thus, Hannon (Hannon 2005) summarises "the role of the entrepreneurial educator in Higher Education is conceptually and pedagogically challenging" (Hannon 2005: 305). And while there has been progress in recent years, it is widely acknowledged that much remains to be understood about the processes of entrepreneurial learning (Corbett 2005; Harrison 2005b; Politis 2005; Rae 2006). Cope (Cope 2005) too insists, "a better theoretical grasp of entrepreneurial learning is imperative".

Summarizing the above, entrepreneurship may be considered a highly challenging discipline to teach as it is complex and unpredictable; dynamic and nonlinear. Therefore, preparing for entrepreneurship is not about the replication of behaviour or experiences, nor about the pure acquisition of knowledge, but rather requires learners to be critical and to actively engage in entrepreneurial experiences. Thus, gaining entrepreneurial knowledge seems to happen in quite a particular context and under certain conditions. This suggests the use of special pedagogies capable of stimulating and imparting knowledge simultaneously (Solomon 2007; Anderson and Jack 2008). Or as Ronstadt captures it nicely: "What's needed is a flexible and time efficient planning mechanism, one that fosters creativity rather than detail, one that identifies options rather than a single course of action, one that is a realistic compromise between the twin dangers of under- and over-analyzing, and yet one that admits the dominance of uncertainty and our likely inability to foretell the future in a traditional business plan" (Ronstadt 1985:15).

#### 3.4 Entrepreneurial learning in a higher education context

Educating entrepreneurship in a higher education context presents a special challenge in that the academic environment should prepare for practice while also embedding theoretical knowledge in a value adding way. Izquierdo (2008) points out the role of universities as creators and disseminators of higher level knowledge. This knowledge is more than the everyday practical knowledge that can be assimilated by experience. In 2006, the European Commission (Commission 2006) identifies the education of skills, behaviours and mindsets as a most common goal of institutions educating entrepreneurship, and positively notes that this implies a broader concept of entrepreneurship, exceeding the pure knowledge and skills-based approach. At the same time, this broadened understanding of the education's objectives makes high demands on higher education. In the following, the particular contribution of higher education, current demands and future challenges, as well as the way that universities currently cope with them are discussed.

### 3.4.1 Higher order thinking and the role of theory

Theoretical knowledge enables a critical ability and is the remit and purpose of universities (Fiet 2001b). Moreover this critical ability is founded on higher order skills, those most likely to be developed in the university. Izquierdo (Izquierdo 2008) suggests that these are needed for enterprise because; Higher order thinking is non-algorithmic, which means that the path of action is not fully specified in advance; Higher order thinking often yields multiple solutions, each with costs and benefits, rather than unique solutions; Higher order thinking involves the application of multiple criteria, which sometimes conflict with one another; and Higher order thinking involves uncertainty (Izquierdo 2008:23; based on Resnick 1987). Not everything that bears on the task at hand is known. Whilst training courses by non-higher education can usefully deliver the basics of small business management, even new businesses planning for entrepreneurship, only universities have the abstract knowledge to teach about, as well as, for entrepreneurship (Cope 2003). Thus, higher order thinking is identified as a major goal of university education (Resnick 1987) and is considered to be particularly useful to prepare for entrepreneurship in that it “involves a cluster of elaborative mental activities requiring nuanced judgement and analysis of complex situations according to multiple criteria” (Resnick 1987:45). At the same time, higher order thinking is identified as most difficult to teach (Reigeluth 1999) and thereby reflects the challenge of entrepreneurial learning.

Fiet (2001a) argues for the importance of theoretical foundation of entrepreneurship education. He claims we become irrelevant as teachers, when we fail to apply theory as a tool to answer student questions. He goes on to argue for the importance of developing more refined, cumulative theory of entrepreneurship and teach it to students through a learning by doing approach. “Educators must increase the theoretical content in their courses if they hope to develop in students the cognitive skills to make better entrepreneurial decisions (Fiet 2001)”. Rae (Rae 2004) is critical towards academic theory that he considers abstract, generalized, and explicit and which seeks to be provable. Considering the particularity of entrepreneurship he suggests to develop ‘practical theory’ which emerges from the “implicit, intuitive, tacit and situated resource of practice” and gives consideration to the exploratory nature of the discipline (Rae 2004). Indeed, many scholars have recently adopted a narrative approach to understanding

entrepreneurial processes and learning as it emerges through entrepreneurship practice (Clarke and Holt 2010; Fletcher 2006; Rae 2004).

However, Cope and Watts (Cope 2000) worry that for most entrepreneurs, it may be difficult to articulate their learning processes as those are usually considered to be unintentional and rather accidental (Murphy 1995). Moreover, entrepreneurs are not used to reflecting on their own learning (Warren 2004).

#### 3.4.2 Experience and Reflection

For practitioners, it appears that in learning to be entrepreneurial, the emphasis is typically experiential. Solomon, Duffy, and Tarabishy (2002) comprehensive review found that "experiential learning" is widespread, thus reflecting Fayolle and Gailly's (2008) point that entrepreneurship education is driven by experience more than by systematic teaching approaches. Importantly, learning from experience translates not just into a 'learning by doing' approach, but needs to be 'learning *from* doing'. Also Baum et al. (Baum et al. 2011) found that 'practical intelligence', emerging from experience, positively interacts with business growth, especially in the early years of business creation. Krueger (Krueger 2007) argues that it is not the experience *per se* but the lessons learned from it that is more important. Parker (Parker 2006) found that entrepreneurs learn only up to 20% based on new information but up to 80% based on former experience. Cope and Watts (Cope 2003) come to a similar conclusion as Krueger. They found that higher level learning as described earlier happens 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. Their results demonstrate how higher order learning is based on entrepreneurial experiences and the guided and systematic reflection on those.

Also, Rae and Carswell (2001) argue that it is through the sense making/interpretation of the experience that learning happens (2001:157). This is confirmed by Harrison and Leitch (2005a), but also Sardana and Scott Kemmis (2010) who emphasize the importance of exploring the influence of prior experience and context on learning. As argued above, any entrepreneurial experience is always embedded into multiple contexts, and thus also learning is bound to the context of the learning experience. Gibb

too, suggests a stronger focus on context to understand entrepreneurial learning (Gibb 2002, 2005).

While information can be gathered by listening and reading, experience can only be gathered by doing, thinking, talking, in short – activities. Thus, learners have to play an active role in gaining experience from their activities, but they also have to reflect on the processes and outcomes. Jack and Anderson go on to suggest that education should produce “reflective practitioners” (1999). Thereby, education needs to provide possibilities for both entrepreneurial experience and reflection. Timmons and Stevenson (1985) suggest that entrepreneurship itself is an ongoing lifelong learning experience and, as such, the best way to learn is to combine experience with formal educational activities. In line with this argument, Wee (2004) asks for the provision of *authentic* entrepreneurial experiences to better equip graduates for the world of entrepreneurship and generally suggests a problem-based learning approach. Rasmussen and Sorheim (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. On the contrary, Corbett (2005) connects insights on knowledge, cognition and creativity to identify the uniqueness of entrepreneurial learning processes of individuals and suggests a greater appreciation of *individual* learning differences. However, based on experiential learning theory, he also emphasizes the importance of understanding learning within and from the process of entrepreneurship practice.

#### 3.4.3 Cognition and entrepreneurial learning

In essence, entrepreneurial learning seems to be learning through and from experience. As mentioned above, Holcomb et al. 2009 (2009) point out that the experience considered to be particularly powerful is that of learning from entrepreneurial practice. This can also be argued from a cognitive perspective. Brown et al. (1989) claim that conceptual knowledge cannot be abstracted from the situation in which it is acquired and used. They claim that knowing and doing are reciprocal, whereby knowledge also is a product of what we do, the specific context of the action, and the culture within it is constructed and used (Brown 1989). Brown (Brown 2005a) distinguishes between

domain knowledge and strategic knowledge. Learners acquire domain knowledge from textbooks and class lecturers *about* a subject, but he argues that “domain knowledge is necessary but not sufficient for expert performance. It provides insufficient clues for many students about how to solve problems and accomplish tasks in a domain” (Brown 2005:49). They suggest a ‘cognitive apprenticeship’ – the participation in *practice* in a domain – as a means to enable learners to actually make use of the concepts, facts and procedures (domain knowledge) in order to solve real-world problems.

Groves et al. (2011) suggest that entrepreneurial cognition processes combine conventional linear thinking (analytic, rational, logical) with nonlinear thinking (creative, lateral, intuitive, emotional) that incorporate both imagination and insight. They found that entrepreneurs possess a greater balance of both modes of thinking. Also Barbosa et al. (Barbosa et al. 2008) argue that entrepreneurship education should develop both analytic and intuitive modes of thinking to better prepare students for the entrepreneurial practice, because this will minimize risk and stimulate entrepreneurial intention. They argue that this can only happen through an experience based approach to education combining knowledge, critical analysis and possibilities for transforming entrepreneurial intention into action (Barbosa et al. 2008). As opposed to the above suggested combination of linear and non-linear modes of thinking, Chia (1996) asks for a radical shift in current pedagogical approaches away from analytical and problem-solving competences towards a more imaginative, intuitive way of thinking.

Krueger (2007) argues that our pedagogical practice becomes most efficient when reflecting on certain well-known cognitive phenomena. He argues that insights from cognitive developmental psychology demonstrate how deeply rooted belief structures eventually anchor entrepreneurial thinking, and how those beliefs develop and change along the entrepreneurial practice. These insights help to identify the developmental experiences that are at the source of entrepreneurial beliefs – and can enrich pedagogical practices (Krueger 2007). The process becomes embedded when individuals organize knowledge into cognitive structures that link knowledge elements in relationships of commonality or causation. Importantly, it is for this very reason that significant asymmetry in entrepreneurial learning arises as different individuals choose, shape and learn from experience differently as a result, in part of their prior experience (Holcomb et al. 2009) as argued earlier. Thus, it is argued that education should take into account

individual cognitive processes. Many scholars support the idea that matching cognitive learning styles with the pedagogical approach will improve learning outcomes (Halpin 1986; Hayes 1994; Hodge 1983; Trout 1994; Trout 1985). However, some suggest that a mismatch in learning environment and learning style may help the learner to “develop a wider range of coping strategies and behaviours” (Hayes 1994:67).

#### 3.4.4 Autonomy and self-directed learning

Previously, higher order thinking was argued as one objective of entrepreneurship education at university level and the profoundly experiential nature of entrepreneurial learning was identified to be context dependent. Learning entrepreneurship thus becomes a unique experience of the individual – placed in a particular context where it is lived and made by the individual. Consequently, it is widely suggested that education should seek to develop an entrepreneurial personality able to cope with the challenges of these complex and unpredictable experiences rather than building a stock of knowledge (Carrier 2007; Karp 2006; Krämer 2007; Neck and Greene 2011). But to enable this kind of learning and development, learners need to actively engage in experiences and should thus possess a certain degree of autonomy in learning behaviour. Yperman (2007) argues that autonomy in learning presents a basic entrepreneurial competence in adult education regardless the discipline. Moreover, Krämer (2007) suggests that autonomy as a personality trait is more than an objective of education but rather a basic prerequisite to enable entrepreneurial learning and should thus be developed long before university level.

Thus, considering the general understanding of entrepreneurship education today as subject-oriented (Kyrö 2005a; Loebler 2006), going beyond business creation (Gibb 2005; Neck and Greene 2011) and aiming for self-directedness and generally self-responsible activities (Bird 2002). Scholars are asking how education can actually be designed without a pure focus on knowledge acquisition and thus enable an entrepreneurial mastery of our lives.

Because some consider entrepreneurship to be based on the idea of a mature individual capable of controlling its learning and life-activities (Clarke and Holt 2010), the concept of self-directed learning seems to provide an interesting solution (Bird 2002; Krämer 2007). Self-directed learning builds on the personal responsibility of the learner and leads



towards a self-direction in learning (Caffarella 1993), whereby the teaching-learning transaction and the characteristics of the learner are self-directed (Brockett 1991). Lumpkin and Dess (1996) highlight autonomy as a key dimension of an entrepreneurial orientation based on its importance to entrepreneurship. As a result of a later study, Lumpkin et al. (2009) conclude that “autonomous decision making and action can provide a vital avenue for achieving strategic advantages and entrepreneurial outcomes” (2009:65), but state that autonomy and self-directedness recently received less attention in favour of factors such as innovativeness, pro-activeness, or risk taking. Fiet (Fiet 2001a) suggests a more implicit approach. He focuses on in-classroom education and suggests theory-based activities to inspire theoretical learning through student responsibility. He proposes entrepreneurship educators should delegate parts of their educational responsibility to students. “The question for educators faced with ensuring student mastery is not “What am I going to teach today?” but “What am I going to have my students do today?”(Fiet 2001:101).

The evidence of the literature allows us to conclude that entrepreneurial learning is not only linked to, but rather based on an autonomous and self-directed learning behaviour of the individual learner. Consequently, while education can create a stimulating learning environment, learners must actively engage in the learning process and demonstrate self-directedness as a basic prerequisite of any entrepreneurial practice inherently characterized by autonomy and self-responsible behaviour.

#### **3.4.5 Challenges and demands on higher education**

Kuratko (2005) puts it very positively, by stating that “we are at a point in time when the gap between what can be imagined and what can be accomplished has never been smaller”. He identifies three major challenges for education. Educators must become more competent in the use of technology; they must develop the same innovative drive as their students; and institutional reforms must be further stimulated to spur the legitimacy of entrepreneurship education and develop the next generations of educators. Indeed, Gibb (2005) argues that a special challenge lies in the latter issue – the introduction of entrepreneurship into curriculum. In his view, the major issues include a clarification of “learning objectives and outcomes, the assessment and accreditation, the

role of business and the community; the particular role of 'externals' in the teaching and teacher competency and training" (Gibb 2005:57).

Klofsten and Jones-Evans (2000) suggest that universities should carry out three types of activities to stimulate entrepreneurship. First, activities generally creating and maintaining an enterprising culture at the university as integral part of any course offer. Furthermore, universities should offer separate courses for all students as well as specific training programmes for students with the ambition to start their business. Chia (Chia 1996) puts this strongly, the cultivation of entrepreneurial imagination is the single most important contribution of universities and Business Schools and suggests they refrain from an "educational strategy that privileges the 'weakening' of thought processes as to encourage and stimulate the entrepreneurial imagination" (Chia 1996:409). Yet, Gibb (1996) points to the current dilemma, that only few business schools are actually in a strong position to meet the challenges of teaching an entrepreneurial holistic management approach.

Taking account of these comments it seems clear that much work lies ahead for higher education to strengthen an entrepreneurial culture in general and to stimulate entrepreneurial learning through curriculum design and innovative pedagogies. However, these measures can only create a framework and stimulating environment for learning, while the entrepreneurial learning process itself remains opaque and is primarily directed by the learner.

#### **3.5 Insights from learning theory: Understanding entrepreneurial learning?**

During the past decades, the understanding of how learning happens has gone through a number of major paradigmatic shifts – all of which impacted on entrepreneurship education and the understanding of how entrepreneurs may learn (Kyrö 2005a). We will now link the previously presented insights and implications from learning theory to the understanding of the entrepreneurial learning.

To exemplify the extent to which each learning paradigm contributes to the understanding of entrepreneurial learning the following section will compare their implications from an ontological (our ideas about the world and human beings),

epistemological (idea of knowledge) and pedagogical perspective (where and how to learn) and discuss their potential contribution to understanding entrepreneurial learning. In particular, the chapter will discuss solutions provided and problems posed by the constructivist paradigm, while from the latter emerges at the same time the research problem.

#### 3.5.1 Behaviourism - a "supply-model"

Traditional behaviourists study and understand learning as observable change in behaviour (Skinner 1953; Watson 1913), whereby any cognitive or affective processes are largely excluded (Watson 1913) and the mind is seen as a "black box" (Hergenhahn 1993; Ormrod 1999). Thus, from an epistemological perspective knowledge is seen as rigid and inflexible input transferred to the learner, and which according to the stimulus–response principle evokes identical and predictable learning outcomes within the learning individual. Only changes in behaviour are researched and understood as learning outcomes (Bouton 2009). Behaviourist education emphasizes theoretical knowledge and information, which usually is decontextualized (Béchar and Grégoire 2005).

On a pedagogical level, behaviourist assumptions translate into traditional forms of entrepreneurship education applying traditional teaching methods and focusing on the transfer of theoretical or procedural knowledge (Loebler 2006; Maranville 1992). In the classroom, the lecturer takes the role of a presenter, imparting theoretical knowledge to learners. The learner plays a passive role as recipient and consumer of knowledge and is not attributed control over the learning process (Hergenhahn 1993; Izquierdo 2008; Loebler 2006). Behaviourist principles have mostly been applied in early forms of entrepreneurship education and translated into traditional teaching approaches and the use of business planning courses (Béchar and Toulouse 1991; Ronstadt 1985b). Béchar and Grégoire (2005) define entrepreneurship education on the basis of behaviourist learning theories as "supply model", which focuses on the supply-side of education. Its philosophical foundation is objectivist – assuming the existence of an objective (entrepreneurship) reality that can be learned about. While the supply-model has been established as the dominant approach to entrepreneurship education, it is increasingly criticised for its limiting and inflexible character (Honig 2004). "Despite the ubiquity of

business planning education in entrepreneurship, there is little evidence that planning leads to success" (Honig 2004: 258). At the same time, referring to Armstrong (1982), Honig speculates that the enthusiasm for business planning stems from the strategic planning literature and seeks to diminish "haphazard guesswork". However, Ananou and Filion (2010) argue that entrepreneurship is unpredictable and dynamic and that none of the calculations and predictions of a business plan have ever turned out exactly as predicted. They go on to suggest an intuitive approach to planning entrepreneurship, incompatible with principles of behaviourism.

Another limiting aspect of behaviourist assumptions is related to what is recognized as learning outcome. "Learning could be seen as the sum of reactions – more reactions meant more learning"(Kyrö 2005a). Behaviourist education only acknowledges as learning what can be behaviourally defined, whereby the only measurable behaviour in entrepreneurship is starting a business. While the measure of success of an entrepreneurship education has often been limited to counting the number of businesses created, entrepreneurial learning today is considered to be more holistic and to aim at stimulating entrepreneurial behaviours, attitudes, skills exhibited in all kinds of organisations and at all levels (Gibb 2005).

Furthermore, the supply model suggests that a classroom that is governed by the educator and that certain stimuli or incentive systems will trigger performance. This may conflict with an arguably *internal* locus of control (Rotter 1989) and strive for independence (Anderson and Starnawska 2008; Anderson and Jack 2010) of potential entrepreneurs.

It may thus be concluded that behaviourist principles have had their time and place in entrepreneurship education (Kyrö 2005a) but that today, education cannot prepare for a highly uncertain and rapidly changing business environment through the reproduction of existing knowledge and the replication of procedures.

#### 3.5.2 Cognitivism: A "demand-model"

Based on the discovery that identical stimuli can produce various learning responses within individuals, the cognitivist learning paradigm (Köhler 1925; Piaget 1929) investigates the complex human processes of the "black box" and focuses on processes

of information processing like thinking, knowing or problem solving. On an epistemological basis, knowledge is acquired through cognitive processes such as reasoning and memorizing (Hergenhahn 1993; Ormrod 1999) but based on the individual cognitive development of the learner (Piaget 1929). Cognitive learning theories are based on a *subjectivist* philosophical foundation (Béchar and Grégoire 2005) applying a subject-oriented learning approach, that focuses on the individual needs of the learner (Kyrö 2005a).

Béchar and Grégoire (Béchar and Grégoire 2005) entitle this approach to education as “demand-model”. As opposed to the supply-model of education, the demand-model now focuses on the individual needs of the learner. Thereby, the role of the teacher is seen as facilitator of individual learning processes and as a tutor to assure the appropriation of knowledge. Consequently, students are seen as active participants of the learning process (Kyrö 2005a; Loebler 2006) possessing individual learning preferences. While behaviourist education aims at remembering and applying learned knowledge, cognitivist education emphasizes understanding (sense making) and analysis (the organization of knowledge) (Ormrod 1999) as active process of the individual learner. This corresponds to the generally acknowledged objective of entrepreneurship education to stimulate independent reflections (Clarke and Holt 2010; Gibb 2005) as opposed to providing pre-defined solutions.

However, cognitivism focuses on *cognitive* processes of learners and the way they process information. It therefore assumes that once an issue is understood in its principle the learner can transfer and apply it to any situation; there is no need for practical experiences outside classroom (Hergenhahn 1993). Yet, it was argued earlier that entrepreneurial learning is essentially experiential (Anderson 2005; Gibb 2005; Rae 2007; Rasmussen and Sorheim 2006); thus a learning by doing and moreover a learning from doing (Rae 2001) – the reflection on practice (Cope 2003; Jack and Anderson 1999). Cognitivism may thus not fully respond to the needs of a theory of entrepreneurial learning (Izquierdo 2008; Kyrö 2005a; Loebler 2006).

However, there have also been useful insights derived from cognitive theories arguing that entrepreneurship education needs to stimulate both analytical and creative thinking; and that matching cognitive learning styles with the pedagogical approach will improve learning outcomes (Halpin 1986; Hayes 1994; Hodge 1983; Trout 1994; Trout

1985). Thus, a strength and contribution of the subjectivist demand-model to entrepreneurship education may lie in its acknowledgement of the unique personality characteristics of the entrepreneurship student (Sexton and Bowman Upton 1987). Honig (2004) argues from a cognitivist perspective that Piaget's concept of equilibration (Piaget 1937) – which is the organisms desire to eliminate perturbation and create cognitive balance – provides both “cognitive tools and flexibility in accommodating unanticipated environmental factors faced by future entrepreneurs”(Honig 2004:258). Indeed, it was exactly this principle that was taken up by constructivists, as the essence of learning and builds the basis of the constructivist learning theory (Glaserfeld 1996).

#### 3.5.3 Constructivism: A theory of entrepreneurial learning?

While the epistemological basis of both Behaviourism and Cognitivism is positivist, and based on the premise that knowledge itself is objective, Constructivism is a theory of knowledge (Bodner 1986). It is radically different in that it considers knowledge to be constructed by the individual. Constructivist conceptions thus derive from an interactionist philosophical paradigm that assumes that “reality is both influencing and influenced by human agency” (Bécharde and Grégoire 2005:115). Grounded in the work of Piaget (1937, 1947) learning is considered to be a process of developing/adapting cognitive patterns and meaning schemes that individuals hold about the world (accommodation) in order to make *viable* experiences – experiences that help us navigate through our life. As Bodner (1986) puts it: “Each of us builds our own view of reality by trying to find order in the chaos of signals that impinge on our senses. The only thing that matters is whether the knowledge we construct from this information functions satisfactorily in the context in which it arises”. Fletcher (2006) argues that herein lies the essence of the entrepreneurial practice and that the entrepreneur's ability to recognize and act upon opportunities – within a multitude of options and in a specific social and cultural context – is essentially constructivist.

To maximize the potential of entrepreneurial value creation, Karp (Karp 2006) draws attention to the *inner* reality of the entrepreneur. He argues that entrepreneurial activity must be “subjectively in accordance with their own and others perception of reality”, it

should be based on their feelings and intuition, and be in according to their dreams and identity. He goes on to suggest constructivist principles to develop a better understanding of conditions influencing entrepreneurial reality construction (Karp 2006:302). Also Anderson (Anderson 2000) suggests that the entrepreneurial approach is shaped and formed by the entrepreneur's values. He goes on to argue that the entrepreneurship is "protean in that it takes its shape from the dynamics of the individual fitting themselves into their perception of the socio-economic context" (Anderson 2000:201). Downing (2005) refers to the social dimension of all entrepreneurial processes such as learning, vision building, innovation, networking and social capital and suggests that the social constructivist paradigm helps understanding interactions between entrepreneurs and stakeholders in all areas. Bouchikhi (1993) too, argues from a social constructivist perspective that the entrepreneurial process emerges from a complex interaction between the entrepreneur, the environment, chance events and prior performance.

Social constructivism seems to provide answers and insights into understanding the entrepreneurial process. But more importantly, more and more scholars employ its principles to understanding entrepreneurial learning processes (Anderson and Jack 2008). Loebler (2006) uses the metaphor of a roadmap and argues that "In this environment entrepreneurs cannot always use given 'roadmaps' from management and entrepreneurship textbooks (...) In times of change they often have to create their own, new 'roadmaps' to find their way through unknown territory"(Loebler 2006:20). He goes on to suggest a more process driven pedagogy with an open learning process to allow for the creation of 'roadmaps' along the way. A different perspective is taken by Mayer (Mayer 2004), who suggests that constructivist based pedagogy actually works best with focused curriculum and guided instruction rather than pure discovery and unstructured classroom.

Bécharde and Grégoire (2005) entitled the social constructivist approach to entrepreneurship education as "competence-model" that is neither focused on the demand nor on the supply side of education, but on the process of interaction between both sides. "Given the premises that learning emerges from an interaction between human agents and their environment, teaching is conceived as a strategic intervention to allow for – and influence – how students organize the resources at their disposal (i.e.,

knowledge, abilities, etc.) into competences that can be mobilized for action”(Bécharde and Grégoire 2005:116). Referring to Bird (2002) they go on to suggest a self-directed learning approach (Caffarella 1993) to competency development for adults as it involves “student centrality in the design and execution of a learning project” (Bird 2002:203). Thus, the competence-model aims at creating “individual-level behavioural competency”. Thereby, the teacher is seen as a coach or developer who tries to stimulate and accompany the learning process. Learners, on the other hand are not only participants in the education but they are the main actors and active creators of knowledge (Bécharde and Grégoire 2005; Bird 2002; Kyrö 2005a; Loebler 2006). Or as Blenker et al. (2006) puts it: “Learning’ is connected to approaches according to which the student or learner is invited to become an active and equal partner in the learning process”(Blenker et al. 2006:28).

In line with this, Loebler argues that “In this world entrepreneurs have to learn more about learning than they do about their special subject” (Loebler 2006:20). To enable this particular form of learning, lecturers are challenged to demonstrate imagination and creativity in their pedagogies (Bécharde and Grégoire 2005; Bodner 1986).

Furthermore, constructivist education mainly focuses on dialogue and interactive methods (Gergen 1999; Glaserfeld 1989) and seeks to inspire independent forms of thinking (Glaserfeld 1996; Loebler 2006). As argued above, critical and independent thinking are considered to be a basic part of entrepreneurial learning and especially in a university context as they will lead to higher order thinking (Cope 2003; Izquierdo 2008). “Questioning common knowledge is the starting point for creating new knowledge and therefore making new ‘roadmaps’.”(Loebler 2006:20). But prior to questioning knowledge, social constructivism suggests that knowledge is created on the basis of our experiences with the world. Entrepreneurial learning is argued to be fundamentally experiential (Dodd and Anderson 2007; Krueger 2007; Rae 2006) emerging from the particular social and cultural context entrepreneurs act in.

Pulling the demands for entrepreneurial learning together; co-created and interactive, aware of context; reflective and most of all experiential, constructivism seems to provide a good explanation of how entrepreneurs learn.

But taking a closer look at the conditions of the university environment opens up the question how social constructivism can explain the entrepreneurial learning process of



students. Learning according to constructivism arguably happens based on our experiences – and entrepreneurial learning was argued to emerge from and through entrepreneurship practice. Consequently, the following research question emerges:

*If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

### 3.6 Conclusion and problems with the constructivist learning theory

Contrasting the implications of each paradigm for entrepreneurship education demonstrates the radically different approach of each. Indeed, Fayolle and Gailly (2008) argue that at the ontological and theoretical levels, there is no consensus about the nature of entrepreneurship and while a large number of publications, entrepreneurship centers, academic journals and positions exist (Kuratko 2005), the discipline is far from being well established. “In view of this data, one could think that the field is well established. However, there is nothing further from the truth and numerous ontological, theoretical, pedagogical and practical challenges remain”(Fayolle and Gailly 2008:570).

This is exemplified in the table below who captures the essence of the previous subchapters. Mainly based on the reflections of Kyrö (2005a), Loebler (2006), Bèchard and Grégoire (2005), and Fayolle and Gailly (2008), it summarizes the contributions of each learning paradigm and contrasts their implications with current demands on entrepreneurial learning from an ontological, epistemological and pedagogical perspective.

### 3. Entrepreneurship and Entrepreneurial Learning

<i>Learning paradigm</i>	<i>Behaviourism</i>	<i>Cognitivism</i>	<i>Constructivism</i>	<b>« Entrepreneurial learning »</b>
<b>Learning is...?</b>	A replicable change in behaviour	Cognitive process of gathering and processing information	The construction of cognitive schemes and patterns through processes of accommodation	<b>Based on experience,</b> exploratory, creative, context bound
<b>Corresponding Teaching model</b>	"Supply model" – education is provided to learner	"Demand Model" -	"Competence Model" - develop individual competences of learner	"Competence Model" (Bécharde and Grégoire 2005)
<b>Ontological level</b> – idea of the world/ Nature of being?	Empiricism – World can be controlled through reason	Rationalism – Man as information producer and processor	Constructivism – World is constructed by the individual – through communication we can connect to the worlds of others	'Pragmatism' (Kyrö 2005a:93) The world is made /
<b>Epistemological level</b> – How we come to know what we know?	Knowledge is passed on to the learner - Reproduction of behaviour	Knowledge is acquired through cognitive understanding ; transferred to similar situations without actual experience	<b>Knowledge is constructed based on experiences with the world</b>	<b>Knowledge is constructed through and from entrepreneurial experience and its reflection</b>
<b>Pedagogical basis</b> – where and how to learn?	Learning in controllable classroom situation, where knowledge is passed on from lecturer to learner	Learning happens within learner, as cognitive process of memorizing, sense-making, organisation of information / independent from environment	Learning processes of the individual are socially constructed – embedded in social and cultural context	"Learning as complex and diverse process dependent on action taking place everywhere (Kyrö 2005a:93)
<b>The role of the teacher?</b>	Presenter : Imparting information	Facilitator/Tutor: Ensuring the appropriation of knowledge	Coach/ Developer: Conversing with students about knowledge	Coach / developer : Providing entrepreneurial experiences and possibilities for reflection
<b>The role of the learner?</b>	Passive recipients/ consumer of knowledge	Active Participant / processes information based on cognitive developmental level	Main actor / Active producer of knowledge and learning through accommodation	Actively constructing knowledge and meaning
<b>Learners' level of control</b> over learning process?	No control over learning outcome	Limited control based on individual cognitive capacities	Full control over learning process	Full control over process to create value and learning

**Table 7: Implications of learning paradigms and demands of entrepreneurial learning**

We may conclude that behaviourist learning theories, and their objectivist focus on the reproduction of existing knowledge and procedures, are apparently the least responsive to any of the current demands of entrepreneurship education. Cognitivism provides insights into cognitive learning processes and suggests a focus on individual learning needs and the active participation of the learner. However, its principles are based on cognitive understanding and transfer of knowledge to similar situations. Thus, when it comes to the arguably experiential and exploratory nature of entrepreneurial learning, cognitivism does not provide sufficient solutions for the creation of value in an entrepreneurial environment.

As a theory of knowledge, and compared to the previous learning paradigms, constructivism seems to provide a better explanation of how knowledge is created within the complex, chaotic and unpredictable context of entrepreneurship. This is described by Blenker et al. (2006) as follows. "Theoretically it [entrepreneurial learning] is related to constructivist, experiential, existential and socially oriented theories (...) This approach offers a more holistic view of education: the focus is not entirely on cognitive development, but affective and connotative purposes are also taken into consideration" (Blenker et al. 2006:28f).

Furthermore, learning as explained through processes of accommodation and the organism's desire for equilibration provide a solution for the procedural and fluid nature of entrepreneurship, which constantly adapts to a rapidly changing business environment. Moreover, the experiential basis of constructivism and the idea that all knowledge is created in a social and cultural context acknowledges the arguably experiential basis of all entrepreneurial action and its embeddedness into context.

However, when taking a look at the epistemology of constructivism and its understanding of learning, we can see that both learning and construction of knowledge are profoundly based on experiences in the world. Arguably, this provides a solid explanation for how entrepreneurs learn and construct knowledge through and from their entrepreneurial practice (Baum et al. 2011; Krueger 2007; Parker 2006), becoming reflective practitioners (Krueger 2007).

However, within a social constructivist context, entrepreneurial learning seems to possess some particularities that stand out from traditional assumptions on a social constructivist classroom. Based on the above arguments, entrepreneurial learning –

compared to traditional social constructivist learning theory – seems to require an even stronger focus on the entrepreneurial action and the making of experiences in the world (e.g. Bécharde and Grégoire 2005; Fayolle and Gailly 2008; Kyrö 2005; Sarasvathy 2001). While social constructivist theory sees the role of the teacher in the creation of knowledge through reflecting and conversing with learners on subjects – entrepreneurial learning seems to require a stronger focus on actual experience with the world outside classroom. This becomes all the more apparent when considering the ontological basis of entrepreneurial learning described as “pragmatism” (Kyrö 2005) and the idea of a world created by individuals.

Fayolle and Gailly (2008) argue that conflicting ideas on pedagogical and ontological levels are rooted in the confusion of different forms of learning processes in entrepreneurship which address different target groups and differ in their objectives.

To create greater clarity they suggest using a teaching model framework when dealing with entrepreneurship education that addresses both ontological and educational level. On the ontological level they suggest to reflect on the understanding of entrepreneurship education and education in the context of entrepreneurship, as well as on the role of lecturer and learner. On the educational level, five key questions should be asked. First of all, the objectives of the education (Why?) should be identified. Those are directly linked to the four other questions addressing the content (What?), methods and pedagogies (How?), targeted audiences (For Whom?) and evaluations and assessment (For which results?).

Referring to the above presented learning theories and their implications for the entrepreneurial learning process, Fayolle and Gailly (2008) suggest to distinguish three categories of learning processes which each imply different key dimensions of the teaching model and refer to different concepts and theories. Those are a) Learning to become an enterprising individual; b) Learning to become an entrepreneur; and c) Learning to become an academic. While the first category considers entrepreneurship as a broad concept focusing on general attitudes and perceptions and addressing large audiences such as students in and outside business, the second requires a much narrower concept of entrepreneurship focusing on concrete skills to educate an audience of would-be entrepreneurs. An education towards an academic would focus on theoretical concepts and didactical issues, addressing PhD students and lecturers.

This work will focus on the first category and investigate the entrepreneurial learning process when learning to become an enterprising individual in a higher education framework. But from the above reflections also emanates the research problem - especially when it comes to the entrepreneurial learning process of university students. Most students at the beginning of their studies have not had a professional experience in business yet, and most importantly, they have not started or run a business themselves which could serve them as experiential basis for their learning.

They do thus not possess entrepreneurship experience to construct knowledge from. Consequently, the following question arises from a social constructivist perspective on learning. *"If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?"*

## 4. METHODOLOGY

In the previous chapter, entrepreneurial learning was identified as exploratory, embedded into social contexts, creative and most of all experiential. Furthermore, constructivism, as a learning theory, seems to provide a good understanding of how entrepreneurs actively construct knowledge through and from their entrepreneurial experiences. But from exactly this argument emerges a research problem when it comes to understanding entrepreneurial learning in a higher education context. The literature review discussed how the specific environment of university potentially stimulates higher order thinking; provides a theoretical foundation and reflection on experiences; and stimulates both analytical and intuitive thinking – all of which is considered to contribute to entrepreneurial learning. However, arguing from a social constructivist perspective, knowledge is created from and through lived experiences which leads to the following research question:

***If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?***

This chapter outlines the research approach to address this question. It starts with discussing the methodological basis of the study and the choice of constructionism as opposed to positivism. In line with constructionism, as arguably most appropriate to address the research question, the author argues for qualitative methods of data collection. The chapter then outlines the research design and the scientific model based on which a guideline for semi-structured interviews was build. Based on this guideline, face-to-face interviews were held with altogether 54 students and 19 lecturers from 4 international entrepreneurship education programmes. Finally, the chapter introduces the methods of data analyses based in Grounded Theory and the way the data was organized by the help of NVivo.

## 4.1 Methodological basis

Before conducting research, it is essential to identify the way to look at data; deal with it and make sense of it (Silverman and Marvasti 2008). Today, scholars mainly distinguish between two major epistemological approaches to understand and interpret data – the positivist and the constructivist philosophy. On a methodological level, each of them provide radically different ideas and suggest different methods and practices to research the question of “how we come to know the world”.

Simply speaking, positivist philosophy excludes all metaphysical phenomena and purely concentrates on the observable and measurable world. It is based on the idea that all data whether biographical information or statements about beliefs “give access to ‘facts’ about the world” and where “reality is imperfectly presented by an account, checks and remedies are to be encouraged in order to get a truer or more complete picture of how things stand” (Silverman 2006:119). Positivist philosophy engages the question of “*what is*” and implies empiric research methods to discover reality. In contrast, constructivism does not assume that there is one reality to discover, but that there are social *processes of reality construction* – and thus asks for “*how*” something comes to being (Fletcher 2006), usually using qualitative research methods (Creswell 1994). However, constructivism acknowledges that empiric research can serve to exemplify certain viewpoints through simplified contrasting, or to make useful social predictions (Gergen 1999:122).

This work looks at how university students in the scope of an entrepreneurship education learn to be enterprising. It seeks to understand their learning processes and the way they create meaning from their actions. Thus, the research is conducted from a constructivist perspective as it primarily seeks to understand the *process* of learning and investigates the ‘how’-question (Fletcher 2006; Silverman 2006; Silverman and Marvasti 2008). It then takes a look at the ‘*why*’ and thus the intentions and motives that lie behind the process (Charmaz 2006; Silverman 2006).

Moreover, as regarding the obviously polysemous (Fayolle 2008), chaotic (Neck and Greene 2011) and protean (Anderson 2000) nature of entrepreneurship, it cannot be understood as a stable phenomenon to be researched on a positivist basis. Anderson and

Starnawska (2008) point out positivism as dominant paradigm of entrepreneurship research practices and state that it “has brought about a fundamental paradox: researchers often try to analyse a phenomenon that cannot properly be defined. As a result, much entrepreneurship research is fragmentary and focuses narrowly on aspects of entrepreneurship” (Anderson and Starnawska 2008:221). Hacking (1999) addresses the polemic between constructivist and positivist perspectives and states that taking a (social) constructivist perspective today is not a good idea as the term is “obscure and overused”. “If you use it favorably, you deem yourself rather radical. If you trash the phrase, you declare that you are rational, reasonable, and respectable” (Hacking 1999:vii). While constructivism contributes some indisputable and widely recognized ideas on human learning (Schmidt 2003; Sweller 2009), its scientific validity is still doubted by some and its principles are tolerated rather than being fully recognized and respected (Hacking 1999).

However, it is argued above, that entrepreneurial learning is fundamentally experiential (Cope 2000; Krueger 2007; Rae 2007) and considered to be an individual construction process bound to its particular time and context of learning (Anderson 2000). Considering this understanding of entrepreneurial learning, it may be considered a constructivist process at its basis. Thus, researching how university students learn to be entrepreneurial seems most appropriate to be researched from a constructivist perspective.

Constructivist methodology considers knowledge and social reality to be mutually constructed. Insights into these processes may only be gained through social interaction with the target group and naturally imply qualitative and preferably narrative research methods (Gergen 1999; Silverman 2006). Consequently, a qualitative research design was chosen to investigate the research question. Thereby, it should be emphasized that data gained from any qualitative research method is not considered to provide insight into the heads of the interviewees but is mutually constructed with and co-influenced by the interviewer, but also placed into the specific time and context of the interview situation (Byrne 2004; Silverman 2006). Those are natural limitations of a social constructivist methodology, that constructivists are well aware of (Gergen 1999; Kukla 2000).



Social constructivism acknowledges that any research is necessarily influenced and shaped by values, attitudes and personality of the researcher – as opposed to the objective and distant view on the research subject suggested by positivism (Berger 1967; Blumer 1969; Gergen 1999). Kitzinger (Kitzinger 2004) argues against the objective positivist view by stating that even positivist social scientists “(...)have shown that a great deal of what people say about their lives and experiences is (either deliberately or inadvertently) at variance with the facts” (Kitzinger 2004:128). She goes on to argue that constructivism “disputes the possibility of uncovering ‘facts’, ‘realities’ or ‘truths’ behind the talk, and treats as inappropriate any attempt to vet what people say for its ‘accuracy’, ‘reliability’, or ‘validity’(...)” (Kitzinger 2004:128). Thus, results gained from this study are not claimed to provide any objective evidence of reality, but are considered to be a socially created picture, taken at a certain time and place (Hammersley 2002; Huberman 2002). Moreover constructivism acknowledges that multiple truths and multiple realities can exist.

## 4.2 Research design

As argued above, the question ‘how university students learn to be entrepreneurial’ is approached from a constructivist methodology and uses a qualitative research design to investigate the learning process of entrepreneurship learners.

Consequently, the study will focus on university students and an entrepreneurship education environment at Higher Education institutions. Thereby, the research approach is inductive (Holland 1986), as it seeks to derive theoretical assumptions on entrepreneurial learning processes from the investigation of social constructions on learning and thus generalizes on the basis of this data (Feeney 2007).

According to social constructivism, realities are constructed *by the individual*, but at the same time within a *social and cultural context*. This assumption provides two implications for the study of learning processes of entrepreneurship learners:

- a) Learning processes of the *individual* must be investigated
- b) The *social context* of learning must be considered

First, to understand entrepreneurial learning processes the perspective of the learner is investigated and data is collected in direct exchange with the learning individual. Secondly, as constructivism considers people to create meaning within their social environment, the closer learning environment is included in the study, and interviews are realised with *all peers and major lecturers* of the examined entrepreneurship programmes. Those present the most important social influence on learning processes. Considering these perspectives is meant to gain insight into the socially created process of learning within the educational context.

However, a major limitation of the study is that it will not be able to capture the entity of social and cultural influences on the learner through for example family, friends, and work or leisure experiences. Also, the research is limited in duration and scope of the interviews that are limited to a certain length and number. Moreover, considering the constructivist assumption that learning and also entrepreneurial learning can happen anytime and anywhere and that it often is an accidental and unconscious process (Cope 2000; Glaserfeld 1996; Murphy 1995; Piaget 1950), some aspects of the learning process cannot be shared by the interviewee and remain unknown. Thus, the data gained from this research cannot claim to give a complete account and full understanding of learning processes, but as argued above it seeks to give a co-constructed 'snapshot' of the interviewees' constructions at a certain time and place.

As a first step in the design of the research, it needs to be defined *which issues should be addressed to investigate entrepreneurial learning*.

To reflect on entrepreneurial learning from a social constructivist perspective, Loebler (2006) suggests a framework provided by Alberti et al. (2004). They identified a model of key issues in entrepreneurship education, which points out six issues relevant to understanding and investigating entrepreneurship education. Those are Pedagogies, Goals, Contents, Assessment, Educators and Audiences.

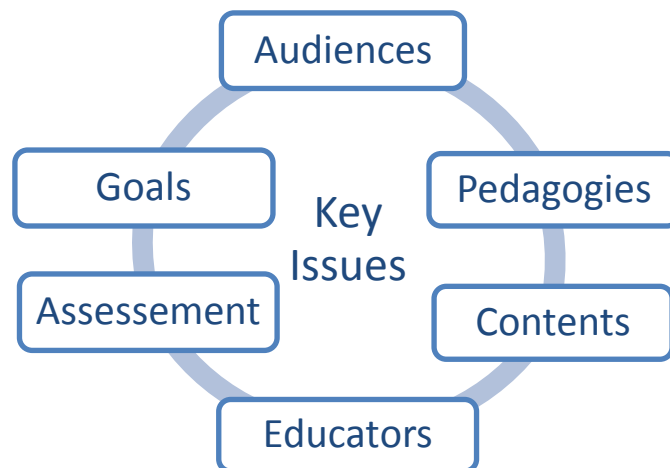


Figure 3: Key issues of entrepreneurship education taken from Alberti et al. (2004:2)

This framework shows strong similarities with the teaching model framework proposed by Fayolle and Gailly (2008) which addresses the same issues but distinguishes the ontological and educational level when reflecting on the different elements. The study of Alberti et al. (2004:1) aims at “identifying key issues in the domain of entrepreneurship education, critically reviewing them and proposing a comprehensive framework for understanding the relations among such issues”. However, they do not actually *address* these key issues from a constructivist perspective and thus only provide a framework to design the study. Consequently, these key issues were partly adapted to fit the constructivist perspective of this study.

a) **Audiences**

The audience that is of interest to the study are university students. Arguing from a constructivist perspective, this key issue is related to how learners of entrepreneurship perceive their *role in the learning process*.

b) **Educators**

Hereby, Alberti et al. also refer to the *role of the educators* which in this case will be university *lecturers*.

c) **Goals**

The goals remain a central focus of study and are addressed from both perspectives – learners and educators. Thus, the students’ objectives and expected learning outcomes will be contrasted with the lecturers’ perspective on goals and outcomes of the education.

d) **Assessment**

Assessment is identified as key issue to be (re-)considered in entrepreneurship education (Gibb 2005; Loebler 2006). Assessment is kept as a key issue of the interview guideline. It is defined as the interviewee’s understanding of how learning outcomes should best be evaluated. Like the other key issues, it is addressed from both the lecturers’ and the learners’ perspective.

e) **Contents**

As the study focuses primarily on the *process* of learning (*‘how’*) – the question of contents (*‘what’*) consequently becomes less relevant to the research objective. However, this key issue is inversed and instead of asking *what* can be taught – it is asked what *cannot* be accomplished by entrepreneurship education – where are its *limitations*.

f) **Pedagogies**

Understanding the pedagogical approach of an education, is defined as “understanding where and when to learn” by Kyrö (Kyrö 2005a). Thus, this key element is investigated through the question of ‘how learning can best be stimulated through education’.

On the basis of these adaptations, the framework of key issues changes as follows.

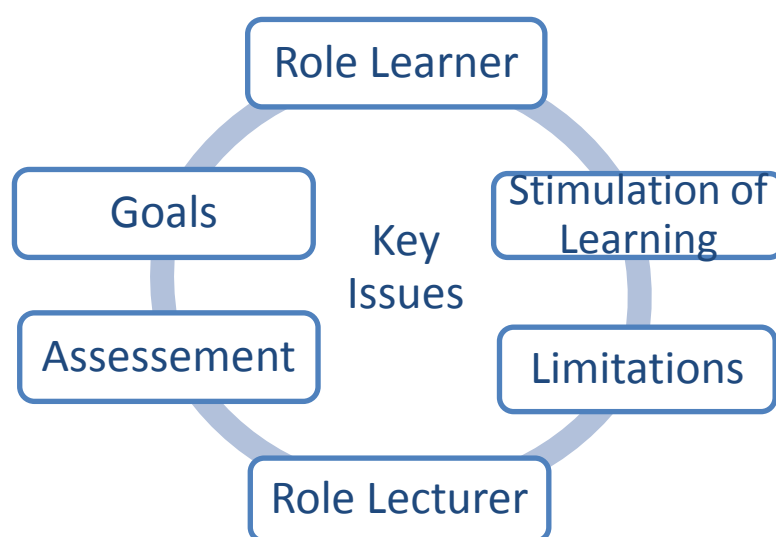


Figure 4: Key issues of the study adapted from Alberti et al. (2004)

Regarding this framework as a basis to investigate the question 'how entrepreneurial learning can be explained through social constructivism', some issues have already been addressed in the literature review. But while arguably, constructivism provides explanations for how *entrepreneurs* learn; the question remains how this can be transferred to the learning of entrepreneurship *students*. As argued in the literature review, some scholars have tried to provide answers to this on a theoretical basis. These answers are reminded in the table below.

<i>Key issues of entrepreneurship education</i>	<i>Answers provided by constructivism</i>	<i>Sources in literature</i>
Role of the learner (audiences)	Active constructors and co-constructors of knowledge and meaning, <b>based on experiences in the world</b>	Loebler (2006); Béchar and Grégoire (2005); Kyrö (2005)
Objectives (goals)	To be defined by the learner To evaluate (conclude/criticize); to create (reorganize knowledge to act) Critical Thinking	Loebler (2006) Béchar and Grégoire (2005) Gibb (2005)
Assessment	In social interaction/communication with teacher Performance in authentic situations	Loebler (2006); Béchar and Grégoire (2005)
Role of the lecturer (Educators)	Coach/ Developer: facilitating learning experiences; providing learning environment and possibilities for reflection	Béchar and Grégoire (2005); Loebler (2006) ; Kyrö (2005)
Limitations of education	?	/
How can learning be initiated (Pedagogies)	Through open learning process and process driven pedagogies / to allow for creation of new roadmaps	Loebler (2006)

**Table 8: Constructivist solutions to key issues of entrepreneurship education**

It becomes apparent that learning based on experience and through social interaction emerges as a central understanding of social constructivist learning. Thus, there are some – albeit theoretical – assumptions on how some of the key issues in entrepreneurship education can be addressed from a social constructivist perspective. However, those do not respond to the central research problem: *If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

### 4.3 Choice of sample

The overall population to be researched potentially consists of all higher education entrepreneurship programmes for (under)graduate students. As argued in the literature review, the number of existing entrepreneurship programmes is huge (Kuratko 2005; Solomon 2007) and those differ widely in scope, objectives and pedagogical approaches (Carrier 2007; Katz 2003; Ronstadt 1985a) which makes them hardly comparable.

The choice of programmes was narrowed down by the purpose of the study – the investigation of learning processes from a *social constructivist* perspective. Thus, the programmes were selected on the basis of their social constructivist orientation and provided the characteristics the study investigates.

Identifying the underlying learning theory of an entrepreneurship education programme as social constructivist, can hardly be directly made and rarely is explicitly communicated. Reasons for this might be multiple. In any case, this subject is not to be investigated in the scope of this study. To point out constructivist-based programmes, an implicit approach was used and some of the major implications of a constructivist education (Bécharde and Grégoire 2005; Kyrö 2005a; Loebler 2006), as presented in the literature review, were investigated. The basic elements are reminded in the table below.

<i>Learning paradigm</i>	<b>Constructivism</b>	<b>« Entrepreneurial learning »</b>
<b>Learning</b> is...?	The construction of cognitive schemes and patterns through processes of accommodation	<b>Based on experience</b> , exploratory, creative, context bound
<b>Ontological</b> basis – idea of the world/ Nature of being?	Constructivism – World is constructed by the individual – through communication we can connect to the worlds of others	'Pragmatism' (Kyrö 2005a:93) <i>The world is made</i>
<b>Epistemological</b> basis – How we come to know what we know?	<b>Knowledge is constructed based on experiences with the world</b>	<b>Knowledge is constructed through and from entrepreneurial experience and its reflection</b>
<b>Pedagogical</b> basis – where and how to learn?	Learning processes of the individual are socially constructed –embedded in social and cultural context	"Learning as complex and diverse process dependent on action taking place everywhere (Kyrö 2005a:93)
The <b>teacher</b> is...?	Coach/ Developer: Conversing with students about knowledge	<i>Coach / developer/facilitator : Providing entrepreneurial experiences and possibilities for reflection</i>
The <b>learner</b> is...?	Main actor / Active producer of knowledge and learning through accommodation	<i>Actively constructing knowledge and meaning</i>
Level of <b>control</b> over learning process?	Full control over learning process	<i>Full control over process to create value and learning</i>

**Table 9 Selection criteria for research sample**

As entrepreneurial learning was identified as constructivist based, the choice of samples was made on the more specific criteria of "entrepreneurial learning" (see table above). More precisely, the following criteria were chosen to identify suitable programmes as those are can most obviously be identified within and communicated by the programmes.

- *Learning is....*

Learning is based on experience; it's exploratory and created by the learner within particular contexts.

- *The pedagogical basis...where and when to learn*

The pedagogical approach should generally be experiential; using interactive and participative forms of teaching that take into account the social and contextual nature of entrepreneurial learning. "Learning as complex and diverse process dependent on action taking place everywhere" (Kyrö 2005a:93)

- *The teacher is...*

The teacher takes the role of a coach, developer or facilitator who provides entrepreneurial experiences and possibilities for reflection without trying to provide answers or simply passing on knowledge.

- *The learner is...*

Actively constructing knowledge and meaning and should thus be pointed out as main actor of the learning process, being responsible for his or her learning.

Being more complex terms that require more abstract understanding of the education, the ontological and epistemological bases were not explicitly investigated in the choice of the sample.

By means of desktop research on the official websites of entrepreneurship programmes some of the criteria above could be identified in a number of programmes. Four programmes have finally been selected and an initial contact was established via telephone or email to the programme directors who accepted their programme to be investigated. The table below gives an overview of the sample whose particular match with the selection criteria that is presented in the subsequent sections together with further details on the programme.



PROGRAMME	DURATION	INSTITUTION/ PLACE	PARTICIPANTS	ORIGIN	SAMPLE
<b>1 IMEET –</b> 'International Master of Entrepreneurship Education and Training' (programme for educators)	2 year post-graduate Master / part time	Aarhus School of Business as part of Aarhus University, Denmark	International Entrepreneurship Lecturers and Consultants	7 Dutch, 6 Danish, 1 English	13 <b>entrepr. educators,</b> 1 programme director
<b>2 KAOSPILOTEN</b>	3 year graduate Master / full time	Kaospiloten Denmark– A private Entrepreneurship school, Aarhus, Denmark	Under-, graduates with entrepreneurial aspirations	28 Danish, 1 Iceland, 1 Cuban, 1 Turkish	31 <b>students,</b> 3 lecturers
<b>3 SMILE –</b> Self management initiative – Extra-curricular modules to support self-management competencies of future entrepreneurs	2-4 day seminars	Institute as part of the University of Leipzig, Germany	Students of the University of Leipzig / all disciplines	9 German	7 <b>students,</b> 2 lecturers
<b>4 COEUR –</b> Competence in EuroPreneurship – Extra-curricular programme	5-day workshop	Delivered in a network of several Higher education institutions across Europe	European under-, graduate students / all disciplines	5 German, 1 French, 2 Lithuanian, 3 Swedish, 3 Scottish, 2 Austrian	16 <b>students</b>

**Table 10: Selected entrepreneurship education programmes and research sample**

Based on their official communication, all of these programmes claim to be subject-oriented, to apply experiential forms of learning through extensive social exchange inside and outside classroom. Furthermore, all programmes consider learning to be an autonomous and pro-active approach of the learning individual and thus demand active participation and engagement of learners. A limitation of this identification method regards the reliability of what is communicated by the programmes and the extent to which their objectives and attitudes towards learning are actually applied in classroom.

The choice of cultures of interviewees might be considered a further limitation. Those mainly originate from central and northern European cultures. For reasons of time and also financial resources a greater cultural balance could not be established. However, the primary focus was laid on identifying programmes with a suitable *philosophy* rather than considering the cultural dimension. Thus, even though the programmes differ in duration, scope and cultural origin of participants, their approach to learning

entrepreneurship has a common basis which, for the purpose of this study, makes them a comparable sample.

#### 4.3.1 Programme 1: IMEET – International Master of Entrepreneurship Education and Training

The International Master of Entrepreneurship Education and Training (IMEET)<sup>1</sup> is offered by Aarhus University in Denmark and presents a postgraduate Master programme for **entrepreneurship educators** and consultants with a focus on participants from European countries. It is a 60 ECTS credit part time programme, designed for a period of 2 years and held within smaller units of about 5 days every three months at different locations around the world, mainly in Europe. The officially communicated objective is as follows:

“The aim of IMEET is to develop participants' capabilities for entrepreneurship teaching and learning facilitation. The master will integrate knowledge on entrepreneurship theories with new participant-centred and action-oriented learning models.”

The master consists of six modules and a master thesis project. The single modules cover the following subject areas<sup>2</sup>:

- Module 1: Introduction to Entrepreneurial Learning (7½ ECTS)

The module deals with theories on entrepreneurship and innovation management, fundamental models of coaching and communication and seeks to establish understanding of the link between entrepreneurship theory and practice.

- Module 2 - Creativity and Enterprising Behaviour (7½ ECTS)

Participants should learn to facilitate entrepreneurship learning. The understanding of pedagogical models should provide insight into learning processes.

- Module 3 - Experi(m)ental situated Learning (7½ ECTS)

Participants apply previously learned contents and competences.

- Module 4 - Field Project - Certificate Project (7½ ECTS)

<sup>1</sup>Official website of the master programme:

[www.asb.dk/en/executiveprogrammes/masterprogrammes/internationalmasterinentrepreneurshipeducationandtraining/](http://www.asb.dk/en/executiveprogrammes/masterprogrammes/internationalmasterinentrepreneurshipeducationandtraining/) (last accessed in september 2011)

<sup>2</sup>This detail information on the programme is provided by the website of the Danish Ministry of Education: [www.ug.dk/programmes/masterprogrammes/socialscienceandconomics/international\\_master\\_in\\_entrepreneurship\\_education\\_and\\_training\\_imeet.aspx#fold2](http://www.ug.dk/programmes/masterprogrammes/socialscienceandconomics/international_master_in_entrepreneurship_education_and_training_imeet.aspx#fold2) (last accessed 15.04.2012)

Builds competences in methodology, data collection, analysis and writing through writing about their own project.

- Module 5 - International field work (7½ ECTS)

Observation, interaction with and learn from experts in their field to test and develop their understandings.

- Module 6 - From Experience to Development of models (7½ ECTS)

Preparation for the master thesis project; analysis of experiences from the field work from a theoretical perspective and transformation into practice-oriented models.

- Master Project (15 ECTS)

A practice oriented project related to the participants own organization and aims at combining own professional experiences with learning from the Master programme.

The IMEET thus demonstrates a strongly experiential and experimental attitude towards learning. Participants are constantly put into different learning contexts where they can actively and autonomously apply, reflect on and develop their understanding of entrepreneurship education and learning. The programme thus fully corresponds to all selection criteria.

The cohort that was researched was the pilot group of the programme, which at that time had just been established. The interviews were only held with those students that worked as entrepreneurship educators, as the consultants do not deal with issues of entrepreneurial learning with university students and are not part of the targeted sample.

#### 4.3.2 Programme 2: Kaospilots

The Kaospilots<sup>3</sup> are an initially Danish entrepreneurship school that today opened up schools in further European countries such as the Netherlands and Sweden. As communicated on their website, the focus of the education lies upon learning by doing and seeks at developing skills, knowledge and attitudes needed to thrive in a world of constant change.

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<sup>3</sup> <http://www.kaopilot.dk/>

“The KaosPilot curriculum and pedagogy is developed to qualify the student to a life as a creative entrepreneur, a value-based leader and a proactive learner in life.”<sup>4</sup>

The programme expects motivation and responsibility for learning from its participants. It is held in fulltime mode over a period of 3 years, whereby the first two years are held at school and the third year is based on an individual entrepreneurial project, to be defined and realized by the student. The first year of study presents an introduction to the schools’ way of functioning and to how students can make the best out of themselves and their studies. It focuses on aspects like personal leadership and the learning of methods and ways to fully exploit personal potential while accommodating the needs of the group. The second year focuses on the “Creative Process Design” and based on real clients, students learn to understand and develop new processes for change. The third year has a highly practical character involving autonomous and pro-active decision making. In the fifth semester, students chose and organise an international internship in a company that fits their interests. In sixth semester, a final exam project with a particular focus is chosen and conducted by the student which is then judged according to four disciplines: project, process, business and leadership.

The Kaospilots particularly emphasize the learners’ responsibility in the learning process and stimulate a highly autonomous and pro-active working. Lecturers function as facilitators of the learning process and are deliberately called ‘team leaders’ instead of teachers or lecturers.

The interviews were held at the Kaospilots in Aarhus, Denmark with 1<sup>st</sup> year students after 5 months of study. Over a period of 3 days, the interviews were realized with 28 out of 32 students of the first year students, their 2 major team leaders, as well as with the local programme director. The full cohort could not be investigated because of a number of absences. Because of limitations in time, only 3 interviews with 2<sup>nd</sup> year students were realized.

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<sup>4</sup> [http://www.kaospilot.dk/pedagogy\\_cp.aspx](http://www.kaospilot.dk/pedagogy_cp.aspx)

#### 4.3.3 Programme 3: SMILE – Self-management Initiative

SMILE<sup>5</sup> stands for 'Self initiative Leipzig' (translated from German) and is a cooperation project of the university of Leipzig, the commercial college of Leipzig and the Leipzig university for technology, economy and culture, promoted by the European social fund (ESF), the regional ministry of work and traffic, and the state ministry of art and science. It was founded in 2006 and its official objective is to develop individual entrepreneurial competences. Its motto is defined as 'recognize who you are – become who you are'.

Since its creation, SMILE offers a number of extra-curricular 2-4 day seminars on diverse topics such as conflict management and team management to strengthen personal competence in an entrepreneurship context. After personal contact with the overall programme director Prof. Helge Loebler, a participation in a 2,5 day seminar was possible. The seminar was entitled 'team management', whereby the focus was laid on the individual's positioning within its social environment from an entrepreneurial perspective. Thus, entrepreneurial aspirations and possibilities of realization within existing networks and social environments were dealt with. By the end of the seminar, every participant had developed and formulated a full vision and action plan for a personal entrepreneurship project, in line with their individual needs and aspirations. Additionally, those were written down by the participants and sent to them exactly one year later.

The education was held in a private building outside the university environment with a small group of students from diverse disciplines. Interviews were held with all 7 students and 2 lecturers. The interview language was German as both interviewer and interviewees were German.

#### 4.3.4 Programme 4: COEUR – Competence in EuroPreneurship

COEUR<sup>6</sup> stands for 'Competence in EuroPreneurship' and presents an initiative of a network of Higher Education institutions in Europe. Its founders are the University of

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<sup>5</sup> <http://www.smile.uni-leipzig.de/>

<sup>6</sup> <http://www.coeur-module.eu/>

Applied Sciences, Mainz (Germany); the ISCTE Business School in Lisbon (Portugal), the Wroclaw University of Economics (Poland), the Robert Gordon University, Aberdeen (Scotland) and the Burgundy School of Business, Dijon (France).

Since 2004 the initiative develops and organises a number of entrepreneurship education projects for under/graduate students from any discipline across Europe. The motto is 'creative in diversity' and the objective is to bring students from different cultural backgrounds together to develop an entrepreneurial idea based on their individual personal and cultural backgrounds. The program used as a sample is an extra-curricular 5-day workshop (COEUR – Idea Generation Workshop<sup>7</sup>) given yearly since 2004 at one of the European network locations bringing together about 30-40 students from partner universities. Since 2008, international universities have become involved and the workshop has been given in China (2009) and Brazil (2010). COEUR furthermore offers the virtual 'Business Creativity Module'<sup>8</sup>, which was developed in 2008 by the financial aid of the European Union and which is delivered in a network of 2-3 universities throughout one semester. The overall structure of all COEUR educations is made up of five steps:

	<i>Objective</i>	<i>Applied Methods</i>
<b>Phase 1 Cooperation</b>	Initiating a complementary use of team resources/ Learning about self and the others	Teambuilding & cooperation activities, (e.g. indoor & outdoor games, kayaking, rock climbing).
<b>Phase 2 Divergence</b>	Divergent phase of idea generation	Choice of diverse creativity techniques and exercises.
<b>Phase 3 Convergence</b>	Convergent phase of idea evaluation	Exchange with entrepreneurs/ stake holders.
<b>Phase 4 Connectivity</b>	Creatively connecting to their social surrounding as a key entrepreneurial quality	Creative communication training (e.g. role plays, art lessons).
<b>Phase 5 Communication</b>	Presentation of entrepreneurial idea to an international panel of experts & entrepreneurs	Oral team presentation using diverse means, (e.g. theatre, music, dancing, role play etc.).

Table 11 Pedagogical structure and objectives of the program

As described above, the COEUR programme presented a perfect match with the criteria researched within potential samples. Learners are working highly autonomous throughout the education and are stimulated to develop own ideas and reflections while

<sup>7</sup> <http://www.coeur-module.eu/main/module/history.html>

<sup>8</sup> <http://www.coeur-module.eu/main/module/content.html>

the framework of the education is highly experiential providing a lot of space for creative thinking.

The researcher assisted a 5-day Idea Generation Workshop in a seminar location in the outskirts of Dijon, France. Interviews were realised with 16 students from six different nationalities, namely German, Scottish, Swedish, Lithuanian, French and Austrian.

#### 4.4 Methods

In line with the previously argued qualitative orientation of the study, the methods of data collection and analysis are based on principles of Grounded Theory, initially developed by the two sociologists Glaser and Strauss (Glaser 1967). Strauss and Corbin (Strauss 1998), who later worked together to develop Grounded Theory, define it as "theory that was derived from data, systematically gathered and analyzed through the research process" (Strauss and Corbin 1998:12). It is understood as a method of qualitative research that closely links the process of data collection, analysis and eventual theory. Like the constructivist paradigm, the ontological basis of Grounded Theory is based in pragmatism (Aune 1970) and thus within an interactionist sociology (Blumer 1969) - the idea that the 'world is made'. Also Kyrö (2005) argues for Pragmatism as a basis of entrepreneurial learning. This link is exemplified by Shalin (Shalin 1991) who states that the constructivist premises of "pragmatist and interactionist thinkers are evident in their assumptions that the active self is central to the understanding of the world's meaningful structure, that any statement of fact must indicate the practical context within which the fact is established, that indeterminacy is endemic to objective reality, and that pattern and structure are best understood as events or emergent processes"(Shalin 1991:223).

While several schools and streams developed out of the initial theory of Glaser and Strauss, this study will use methods of "Constructivist Grounded Theory"(Charmaz 2000), in line with the constructivist philosophy of this research. Charmaz (Charmaz 2000, 2006) distinguishes between traditional and constructivist forms of Grounded Theory. She argues for the inherently constructivist nature of Grounded Theory and states that the constructivist approach is coherent with Strauss' basic intentions in that it

retains “the fluidity and open-ended character of pragmatism” (Charmaz 2006:184). The constructivist-based approach primarily affects the data analysis and the way the data is perceived. The pragmatist basis points the focus towards language and meaning rather than towards overt behaviour or interview accounts taken at face value. Charmaz goes on to argue that “If you hold constructivist sensibilities, you may learn and interpret nuances of meaning and action while becoming increasingly aware of the interactive and emergent nature of your data and analysis” (Charmaz 2006:184).

#### 4.4.1 Instrumentation and interview schedule

To investigate the learning process of entrepreneurship students from a constructivist perspective, it was argued above that a qualitative approach (Dey 1993) and a direct exchange with the target group would be most appropriate to gain understanding of their sense-making processes (Charmaz 2006; Glaserfeld 1992).

“(…) qualitative interviewing is particularly useful as a research method for accessing individual’ attitudes and values – things that cannot necessarily be observed or accommodated in a formal questionnaire (…)” (Byrne 2004:182).

Thereby, a semi-structured questionnaire was chosen as most appropriate interview method. It provides a guideline to address a certain number of issues and at the same time allows for individual expression of thoughts to identify structures of meaning creation (Silverman and Marvasti 2008).

On the basis of the key issues identified above, a guideline for semi-structured interviews was developed. Interviews were held with both learners and lecturers of each programme. Taking into account the different perspectives from which lecturers and learners would reflect on and address the key issues, the formulation of the questions was adapted accordingly to allow a better understanding by the interviewee.



<i>Subject of questions based on key issues</i>	<i>Formulation for LEARNERS</i>	<i>Formulation for LECTURERS</i>
1 – Stimulation of Learning	How do you learn best? What does a good lecture look like?	How can learning be stimulated?
2 – Role understanding: Lecturer / Learner	How can a lecturer do a good job? What is your job as a student?	How do you see your role as a lecturer? What is the role of the students?
3 – Learning Objectives	Why are you here? What do you want to gain for yourself?	What are the objectives of entrepreneurship education?
4 – Possibilities / Limitations	What is the greatest possible outcome of this education? Is there anything the education cannot do?	What are the possibilities of entrepreneurship education? Do you see any limitations?
5 – Assessment	How would you want your learning outcomes to be assessed?	How should learning outcomes be assessed?
6 – Successful education	When has the education been successful to you?	What makes a successful entrepreneurship education?

**Table 12: Variances in interview questions according to target group**

At every time, the researcher was invited as a guest/visitor to the programme and was introduced in front of the class as such. On that occasion, the objectives of the study were briefly introduced as 'investigating learning process of entrepreneurship learners' and learners were invited to an individual interview in a room next to the classroom to answer some general questions on learning and education. It was emphasized that the interview would be held on an entirely voluntary basis and that the data would be treated anonymously. Before each interview, the researcher asked for permission to record the talk.

All learners as well as the previously informed lecturers agreed to realise the interview. Those had an average length of about 15-20 minutes.

To gather the data, principles of theoretical sampling were applied (Glaser 1967) and methods of open, axial and selective coding (Corbin 1988; Strauss 1998) were applied to develop the theory and reach a state of theoretical saturation. In the following, the

processes of data collection and analysis are detailed and reasoned according to the investigated samples.

#### 4.4.2 Data collection – Sampling procedure

Methods of theoretical sampling were used with the objective to maximize the differences between these properties; to compare and contrast concepts, and gain new insights into the conditions of these properties. The logic of sampling is briefly described in the table below

<b>PROGRAMME</b>	<b>DATE &amp; PLACE of data collection</b>	<b>ORIGIN</b>	<b>PERSPECTIVE</b>	<b>RESEARCH OBJECTIVE</b>
<b>1 – IMEET</b> 2 year/post-graduate Master/part time	10/2008, Mikelli, Finland (one-week programme)	7 Dutch 6 Danish 1 English	13 entre- preneurship <b>educators</b> 1 programme director	➤ Building main categories from <b>lecturers’ perspective</b>
<b>2 – KAOSPILOTS</b> 3 year graduate Master/full time	01/2009, Aarhus, Denmark (regular semester week)	28 Danish 1 Iceland 1Cuban 1 Turkish	31 <b>students</b> , 3 lecturers	➤ Building main categories from <b>learners’ perspective</b>
<b>3 – SMILE</b> 2-4 day seminars/ Under/graduate students	02/2009, Leipzig, Germany (3-day seminar)	9 German	7 <b>students</b> , 2 lecturers	➤ <b>Theoretical sampling on short term programmes</b>
<b>4 – COEUR</b> 5 day workshop / under/graduate students	09/2009, Dijon, France (5-day workshop)	5 German 1 French 2 Lithuanian 3 Swedish 3 Scottish 2 Austrian	16 <b>students</b> ,	➤ <b>Theoretical sampling on diversity of cultures</b>

**Table 13: Structure of theoretical sampling**

The first programme was researched to investigate the perspective of the lecturer, while the second was meant to contrast this data with the perspective of the learner. While the second programme presents a long-term education and the influence of education became apparent in the data, a short-term programme was examined to maximize the difference of the property ‘duration of programme’. And finally, another property ‘the cultural variety’ of participants was maximized in the last sample. The details of this

sampling procedure are introduced below as part of the process of data collection and analysis.

While the particular programmes were chosen for reasons of theoretical sampling, the interview schedule remained the same throughout all interviews. This was due to the fact that the logic of sampling aimed at testing/verifying the emerging theory with different variables namely the duration of the programme and the variety of cultures. However, the overall objective – to investigate learning processes – did not change and consequently the questionnaire guideline did not need to be adapted.

*Programme 1: IMEET – The perspective of the lecturers*

The programme was chosen because of the special perspective of its participants: which are entrepreneurship lecturers and consultants taking part in a Master on entrepreneurship education. Participants thus acted as both lecturers in their professional life and as students within the Master programme.

They were thus expected to have a closer understanding of the entrepreneurial learning processes. However, all of the participants strongly identified their primary role to be a lecturer and the interview questions were used in their adaptation for lecturers.

From the analysis of these interviews, a set of major categories emerged, closely linked to the key issues behind the investigation.

- a) Stimulation of learning
- b) Role understanding of lecturers and learners
- c) Outcomes
- d) Limitations of entrepreneurship education
- e) Assessment of learning outcomes

The lecturers were interviewed as elements of strong influence on the social construction process of learning of students. Thus, the major interest was to investigate their expectations towards the learner and their understanding of the learning process as important source of potential influence on the students' constructions. Their perceptions

and expectations now had to be compared to those of the central target group – the learner.

*Programme 2 – KAOSPILOTEN: The perspective of the learner*

The programme was chosen to contribute to category building from the perspective of the learner. Thereby, the Kaospilots present a very intensive long-term programme, that purely focusses on entrepreneurial learning as the school does not offer any other discipline. Comparing the results from lecturers' interviews (programme 1) with the students' perspective reinforced the major categories. And following the analytical process of Grounded Theory, Strauss and Corbin suggest that in the process of theory building, a *central category* of strong analytical power emerges from the data that pulls together all major categories (Strauss and Corbin 1998:146).

After analyzing the data from the first group of interviews, the *learner* seemed to emerge a central element of all categories – and appeared to be central to learning processes, role understanding, outcomes of the education, to assessment and to limitations of education. Comparing and contrasting the new set of interview data from the perspective of the learner reinforced a further component of the central category. A sense of personal *maturity* of the learner was expressed in many ways throughout all categories and shaped the way how learners created meaning in the wider context of the entrepreneurship education.

The programme turned out to be very intense regarding its full-time character and everyday interaction with peers, tutors or external presenters. The influence of the education on learners strongly emerged from the data. This property of the sample initiated further choices for theoretical sampling.

Sampling proceeds on the basis of theoretically relevant concepts (categories)(Glaser 1967) and its purpose is defined as maximizing or minimizing differences among properties of a concept(Strauss 1998). Thus, a programme of much shorter duration was chosen to contrast the results from the long-term education, with a programme, where the influence of the education principles was kept at a minimum level.

*Programme 3 – SMILE: Sampling to contrast duration of programme*

As previously introduced, the SMILE educations present short programmes of 2-5 days and target students of any discipline without requiring any previous entrepreneurship education. The sample was meant to contrast the long-term and highly intensive Kaospilot programme with a very short programme with no selection criteria for participation.

The analysis of the data and its comparison to the previously collected data again strengthened the major categories and gave confirmation to the emerging theory.

A further property of the examined samples was the cultural scope and the one-sided focus on Danish and German students. Therefore, as a further sampling would have to be realised with a sample of greater cultural variety.

#### *Programme 4 – COEUR: Sampling to contrast variety of national cultures*

The COEUR programme seemed to be a suitable sample to maximize the variety of cultures and contrast it against the one-dimensional sample of Danish (programme 1) and German (programme 2). The researcher assisted the 5-day workshop in a youth hostel and seminar location in the outskirts of Dijon, France. Interviews were realised with 16 students from six different nationalities, namely German, Scottish, Swedish, Lithuanian, French and Austrian.

The outcome was surprisingly coherent with previous findings and a state of theoretical saturation was achieved. Thus, no further sampling was thought to be necessary at that point.

A major limitation of the entire study certainly lies in the language in which the interviews were realized. Constructivism emphasises the meaning of language and its embeddedness into cultural concepts and meaning schemes (Glaserfeld 1996). The fact that many interviewees held the interview in a language that is not their mother tongue, presents a major limitation for the data analysis. However, whenever the interview language was not the mother tongue of the interviewee, those were still fluent in that language.

### 4.4.3 Data analysis

The logic of Grounded Theory is inductive, and proceeds from general to specific (Glaser 1967). The objective of data analysis is to build theory from social 'reality' and based on qualitative social data. Grounded Theory suggests to apply a series of analytical tools to derive theoretical assumptions from data; those are methods of *open*, *axial* and *selective coding* (Corbin 1988; Strauss 1998). Referring to Dewey (Dewey 1933), Strauss and Corbin identify 'asking questions' and 'making comparisons' as absolutely essential for the development of theory (Strauss and Corbin 1998:74) and are applied throughout all stages of the analysis. Thereby, the analysis is not an objective process of interpreting reality or an objective truth, but it's a dynamic and fluent process of engaging with the data from the subjective viewpoint of the research data, or as Gergen puts it "The analysis of the data by the researchers presents a viable interpretation of these thoughts, based on the exchange that has taken place"(Gergen 1999).

In the following sections, the processes of open, axial and selective coding of the data are outlined.

#### 4.4.3.1 Open coding

The analysis process starts with open coding which is defined as the "analytical process through which concepts are identified and their properties and dimensions are discovered in data" (Strauss and Corbin 1998:101).

All interviews were recorded electronically and were manually transcribed by the researcher. To organize the mass of data and to create links and connections between sets of data, QSR-NVivo8 was used, a software for qualitative data analysis (Richards 2005). NVivo is considered to facilitate analysis and development of the Grounded theory process (Hutchison et al. 2010) as it allows the electronic organization of text, voice and video material into categories and subcategories and to create links between all of them (Richards 2005).

Through methods of open coding the five major categories were identified from the data:

##### 1 – *Stimulation of learning*

The understanding of how learning can be stimulated

## 2 – Role understanding of lecturer and learner

The social constructions learners and lecturers possess towards their own role and the role of the other within the learning process

## 3 – Limitations

Understand of factors and elements that may limit entrepreneurial learning and how those limitations are constructed and enacted by both learners and lecturers.

## 4 – Assessment

Deals with individual preferences for demonstrating learning outcomes; provides understanding of how learners believe that their learning outcome can best be understood by others.

## 5 - Learning Outcomes

Provides insights into individual objectives, aspirations and expectations towards a successful education; gives insight into learners' motivation to learn.

An example of the subcategories and properties that were identified for category 3) limitations is provided in the table below.

Major categories	Subcategories	Properties
3 Limitations	Limitations related to the individual learner	<ul style="list-style-type: none"> <li>- Level of self-awareness</li> <li>- Level of experience</li> <li>- Level of self-responsibility</li> <li>- Level of independence/autonomy</li> </ul>
	Limitations on programme level	<ul style="list-style-type: none"> <li>- Time/duration of programme</li> <li>- Financial resources</li> </ul>
	Limitations anchored in the nature of the discipline	<ul style="list-style-type: none"> <li>- Definition of discipline</li> <li>- Nature of job opportunities</li> </ul>
	Limitations related to the lecturer	<ul style="list-style-type: none"> <li>- Understanding of the discipline</li> <li>- Level of experience</li> <li>- Creativity</li> <li>- Personal competence</li> </ul>

**Table 14: Example of open coding in research data**

Through primary analysis, the limitations of entrepreneurship education have been identified as a major category, holding several levels of limitations as subcategories such as limitations on an individual level, on discipline level, programme level or on the level of the educators. For each of the subcategories a number of specific properties was identified, "the general or specific characteristics or attributes of a (sub)category" (Strauss and Corbin 1998:117) which define it and give meaning to it. For example on the level of individual limitations located in the learner, those are defined by the learners

level of autonomy and independence to overcome limitations independently from social influences or other barrier, but also by the learners' level of responsibility for their own lives, and the extent to which they actually do what they would like to do. In a next step, these categories are set into relationship to uncover the bigger picture and the central category behind these elements.

#### 4.4.3.2 Axial Coding

In a second step of the analysis, axial coding was applied. Axial coding is defined as "the process of relating categories to subcategories along the lines of their properties and dimensions" termed "axial" because coding occurs around the axis of a category, linking categories at the level of properties and dimensions"(Strauss and Corbin 1998:123).

This is exemplified in the table below where the process of linking properties across different sub/categories is demonstrated.

<b>Major categories</b>	<b>Subcategories</b>	<b>Properties</b>
2 Role understanding	Expectations towards the <i>learner</i> in education	<ul style="list-style-type: none"> <li>- Responsibility for learning (a)</li> <li>- Social responsibility (a)</li> <li>- Independent thinking (b)</li> </ul>
	Expectations towards the <i>lecturer</i> in education	<ul style="list-style-type: none"> <li>- Educate responsibility (a)</li> <li>- Educate independent thinking (b)</li> <li>- Provide experiential learning (c)</li> </ul>
3 Limitations	Limitations related to the individual learner	<ul style="list-style-type: none"> <li>- Level of experience (c)</li> <li>- Level of responsibility (a)</li> <li>- Level of independence/autonomy (b)</li> <li>- Level of self-awareness</li> </ul>
	Limitations on programme level	<ul style="list-style-type: none"> <li>- Time/duration of programme</li> <li>- Financial resources</li> </ul>
	Limitations anchored in the nature of the discipline	<ul style="list-style-type: none"> <li>- Definition of discipline</li> <li>- Nature of job opportunities</li> </ul>
	Limitations related to the lecturer	<ul style="list-style-type: none"> <li>- Understanding of the discipline</li> <li>- Level of experience</li> <li>- Creativity</li> <li>- Personal competence</li> </ul>

**Table 9: Example of crosslinks through axial coding**

The table demonstrates the connections that can be established between the properties of category 2- Role understanding and category 3-limitations, and how some of the properties re-appear across different categories, such as responsibility, independent



thinking and experience. The process of axial coding was consequently applied throughout the entire set of data and gradually helped emerging the central category.

#### 4.4.3.3 Selective coding

Selective coding is the final step in the analysis process and represents the process of integrating and refining the theory (Glaser 1967), when final categories are integrated in form of a larger theory. It also presents the point of 'theoretical saturation' (Corbin 1988), the moment where no new properties or relationships emerge during analysis (Strauss 1998).

In a highly simplified way, the emergence of the central category is exemplified in the table below showing only a part of the main categories.

<i>Major categories</i>	<i>Subcategories</i>	<i>Properties</i>	<i>Central category</i>
2 Role understanding	Expectations towards the <i>learner</i> in education	<b>Responsibility for learning (a)</b> <b>Social responsibility (a)</b> <b>Independent thinking (b)</b>	<b>Maturity</b>
	Expectations towards the <i>lecturer</i> in education	<b>Educate responsibility (a)</b> <b>Educate independent thinking (b)</b> <b>Provide experiential learning (c)</b>	
3 Limitations	Limitations related to the individual learner	<b>Level of experience (c)</b> <b>Level of responsibility (a)</b> <b>Level of independence/autonomy (b)</b> Level of self-awareness	
4 Assessment	Assessment Criteria	<b>Level of independent thinking (b)</b> <b>Level of responsible behaviour (a)</b> Ability to connect to lecturer Ability to create networks	
	Assessment Methods	<b>Testing independent thinking (b)</b> <b>Testing autonomous learning behaviour (a)</b> Allowing social interaction	

**Table 10: Emergence of the central category**

The central category emerged throughout all main categories and the cross linking of their subcategories and properties as partly shown in the table. Obviously, the entrepreneurial learning process across all key issues of the education is linked to

personal qualities of the learner such as responsibility, independent thinking, all of which are summarized with the term '*maturity*' as central category.

#### 4.5 Conclusion on methodology chapter

The purpose of the study is to investigate the entrepreneurial learning process of university students. Based on the argumentation in the literature review, the study explores how constructivist learning theory may provide explanation for the learning process of entrepreneurship students regarding their lack of experience and knowledge which constructivism considers to be the basis of all learning processes.

Consequently, the study is based on a social constructivist methodology and examines the perceptions of learners and lecturers of entrepreneurship across four entrepreneurship education programmes. The data is analysed with methods of Grounded Theory, using a constructivist approach to Grounded Theory, in order to gain a better understanding of how learning processes are constructed and how learners create meaning out of their actions.

The research question calls for an inductive approach to research as theoretical reflections on the question have not provided sufficient answers. The chapter introduced the approach of Grounded Theory to building theory from social research data and exemplified analytical processes of open, axial and selective coding on the basis of the research data. A more complete and detailed account of the research results and the process of theory building is provided in the subsequent chapter.

## 5. ANALYSIS AND RESULTS

This chapter introduces the research results gained from the face-to-face interviews with 54 students and 19 lecturers from altogether 4 entrepreneurship education programmes. The results of both the learners' and the lecturers' perspective are first presented and analysed separately and then contrasted with each other to highlight consistencies and differences. The table below reminds the key issues of the study and the questions through which those were investigated in face-to-face interviews.

<i>Key Issues addressed through question</i>	<i>Formulation for LEARNERS</i>	<i>Formulation for LECTURERS</i>
1 - Stimulation of Learning	How do you learn best? What does a good lecture look like?	How can learning be stimulated?
2 – Role understanding: Lecturer / Learner	How can a lecturer do a good job? What is your job as a student?	How do you see your role as a lecturer? What is the role of the students?
3 – Learning Objectives	Why are you here for? What do you want to gain for yourself?	What are the objectives of entrepreneurship education?
4 – Possibilities / Limitations	What is the greatest possible outcome of this education? Is there anything the education cannot do?	What are the possibilities of entrepreneurship education? Do you see any limitations?
5 – Assessment	How would you want your learning outcomes to be assessed?	How should learning outcomes be assessed?
6 – Successful education	When has the education been successful to you?	What makes a successful entrepreneurship education?

**Table 11: Key issues and interview questions**

In close relation to the key issues listed in Table 15 emerged the major themes of the research which present the basic structure of this chapter. Those are the following.

### *1 – Stimulation of learning*

The lecturers' and learners' understanding of how learning can be stimulated.

### *2 – Role understanding of lecturer and learner*

The social constructions learners and lecturers possess towards their own role and the role of the other within the learning process.

### 3 – Limitations

Understand of factors and elements that may limit entrepreneurial learning and how those limitations are constructed and enacted by both learners and lecturers.

### 4 – Assessment

Deals with individual preferences for demonstrating learning outcomes; provides understanding of how learners believe that their learning outcome can best be understood by others.

### 5 - Learning Outcomes

Provides insights into individual objectives, aspirations and expectations towards a successful education; gives insight into learners' motivation to learn.

The following table reminds the basic information on the investigated entrepreneurship programmes and indicates the abbreviations used in quotations throughout the chapter.

<b><i>Investigated Programme</i></b>	<b><i>Abbreviation in Quotations</i></b>	<b><i>Learners</i></b>	<b><i>Lecturers</i></b>
<b>IMEET</b> (International master of Entrepreneurship Education and Training), 2 year post graduate Master (part time), Aarhus Business School,	<b>IMEET</b> programme	13 Dutch and Danish educators and consultants participating in the programme	1 Danish programme director
<b>KAOSPILOTS</b> – 3 year Master programme (full time) in Aarhus, Denmark	<b>Kaospilot</b> programme	28 mostly Danish 1 <sup>st</sup> year students 3 Danish 3 <sup>rd</sup> year students	1 Danish programme director, 2 Danish team leaders
<b>SMILE</b> (Self-management initiative Leipzig), modular 2-3 day educations (optional, cross-disciplinary), University of Leipzig, Germany	<b>SMILE</b> programme	7 German students	2 lecturers
<b>COEUR</b> (Competence in EuroPreneurship), 5-day Idea-Generation Workshop	<b>COEUR</b> programme	16 European students, 3 group interviews	No lecturers

**Table 12: The research sample**

All quotations indicate the programme the interviewee is part of, the role in which they were interviewed (e.g. learner, lecturer or programme director) as well as their national culture. Regarding the participants of the IMEET programme, those are lecturers themselves taking part in a postgraduate programme on entrepreneurship education. To avoid confusions for the reader the quotations point them out as lecturers and participants of the IMEET programme (e.g. "Marianne, Danish lecturer, participant IMEET programme).

## 5.1 Stimulation of learning

When asking how students learn to work in entrepreneurial ways, the very first question to investigate should be how learning in general is actually stimulated. Understanding the aspects which initiate learning processes within students is considered to be a major starting point to investigate entrepreneurial learning. Hereby, the interview data enabled a comprehensive insight into these aspects.

### 5.1.1 Students' preferences for learning

One central recurrent aspect seems to be the understanding of learning as a social process and therefore as something stimulated through social exchange. Generally speaking, students attribute learning processes to all kinds of learning through experiences and interactions with their social surrounding.

"I like when you go and speak to your tutors or peers about what you just learned, sometimes when I struggle to pick something up I can email speak to or phone a lecturer and if I speak with my peers about what we just learned I always understand it better – it puts it in perspective and I guess that's the easiest way" (Mark<sup>9</sup>, Scottish student, COEUR programme)

Speaking to and communicating with others, whether peers, tutors or teachers seems to be the most convenient and helpful way to understand and learn something. Thereby, the social exchange happens in the scope of their learning environment – with peers and

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<sup>9</sup> The indicated names of all interviewees are invented by the author

lecturers – and seems to allow a sort of testing and locating of their learning within a *safe* environment. As a further step in this learning process, students would like to expand the testing processes to a practical application of this input.

“(I learn best, when it's) A different mix – when it's theoretical and when you put the theory into action” (Solveit, Danish 1<sup>st</sup> year student, Kaospilot programme)

The low-risk environment of education allows students to test the theoretical input to see how it works out in an experiential situation. More specifically, when trying out theory through practical experiences, learners appreciate the possibility for trial and error processes, meaning the possibility to make mistakes in order to learn from these mistakes.

“(...) first you learn a bit and then you try to practice it and are allowed to make mistakes, because mistakes are very good to do and then you can learn from them (...)” (Jan, Swedish student, COEUR programme)

Education allows learning processes through successful as well as unsuccessful experiences and both seem to be an important stimulation of entrepreneurial learning as it enables students to gradually explore reality by finding out what works and what doesn't. Hereby, the specific value of entrepreneurship education seems to lie in the possibility to undergo trial and error processes in the low-risk environment of education.

In this context of experiential application of learning, a further stimulating source of learning may reside in conscious *reflections* on applied learning.

Joanna: “[The most “learnful” lecturer] that was joint lectures (...) where we had two guys from Holland doing some ‘imagining’ with us – it was a very intense and hard working three days – but we had to test it on a project and we had meet up sessions every hour (...) So, it was a very like intense way of doing that shifting all the time.”

Interviewer: Between theory and practice?

Joanna: Ya but then reflecting upon it – **very** frequently – so it would be like reflecting while doing it, actually (...) so, that was very intense” (Joanna, Danish 1<sup>st</sup> year student, Kaospilot programme)

Through reflecting on learning – after and even during applied learning experiences – students seem to undergo a further learning process essential to understand and evaluate the meaning and use of the prior learning steps and to prepare and understand

next steps in their education. In this context, reflection becomes a means to mirror students' learning and enables them to connect to their learning needs and processes possibly presenting a learning process itself.

The above reflections help us to gain insight into how deep learning seems to arise, starting with a social exchange amongst peers and with the lecturer to an experiential exposure to practical learning situations including reflection cycles and to a later application in their professional life. Moreover, this process allows the learner to gradually take on and demonstrate more and more responsibility for his or her learning and attributes space for personal growth to the education

Furthermore, learning is described as being stimulated through the active contribution of the learner which is expressed in the learner's wish to 'co-develop' teaching together with the lecturer.

"(...) I like the mix of getting taught something and having a discussion about something like developing the teaching together (...)" (Annie, Danish 1st year student, Kaospilot programme)

Learning is considered to be stimulated through the contribution of both lecturer *and* learner. But more than that, these contributions seem to be mutually influenced and emerge from one another. Learning thus appears to be socially created – or more precisely – co-created between all participants of the learning environment and is described to happen through social exchange during classes in forms of discussions and reflections on a subject.

Thereby, the student demonstrates a wish to actively take *responsibility* for her learning by wanting to contribute to, and influence on learning processes instead of being a passive consumer of knowledge input. The wish to actively take responsibility for ones learning is strengthened in further statements that directly indicate students wish for autonomous and active contribution to learning.

"On the one hand, I really prefer the kind of teaching or lesson where I can become active myself, meaning with active reading and responding to questions, where you are challenged yourself (...)" (Katrin, German student, SMILE programme, translated from German)

The quotation suggests the desire for autonomous learning and thinking to be a means to stimulate entrepreneurial learning. However, not all interviewees demonstrate a desire for autonomous learning to the same extent and some only become aware of it while reflecting on the question.

"I find traditional teaching quite useful to gain factual knowledge. But also education where you can contribute yourself, where you have to think and develop ideas, there you learn at least as much, if not more – it's another approach and its reasonable on the basis of the facts you were given through traditional teaching – even though it just comes to my mind that you can also gather these facts on your own [unsure laughter<sup>10</sup>]" (Steffi, German student, SMILE programme, translated from German)

While reflecting on the importance of teaching factual knowledge the student realises that she does not need education in order to acquire the information she would like to have, but that learning is stimulated through the instigation of autonomous learning and independent reflections to enable her to develop new ideas and thoughts on her own. So, in parallel to the students' growing awareness of every learners' possibility to autonomously learn and acquire knowledge, she attributes the stimulation of self-responsible learning and independent reflections to the role of entrepreneurship education.

In fact, there is further indication that the development of independent reflections seems to stimulate entrepreneurial learning within students because those wish to undergo an education which raises questions within them rather than giving them answers.

"(...) so very much stories I think and – ya, just how the lecturer can involve in the audience by giving small tasks and raising questions and not just a lot of answers to start with" (Matthias, Danish 1st year student, Kaospilot programme)

Students' desire to develop their own questions instead of being given answers expresses their wish to think on their own and not to rely on information and responses given by others and thus points towards a strong aspiration to learn through *independent reflections*.

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<sup>10</sup> Emotional expression during interview added by author to underline the argument of the quote



Referring back to students' wish to learn through practical experiences and the application of their learning, a further stimulating source of learning may be connected to students' desire to relate to *real life situations* and moreover to *real-time* events.

"I really enjoy the lecturers that I have been given at this school – I think that's what comes closest to the ideal lecture because – the starting point for the lecture or for the teaching is now<sup>1112</sup> – instead of what has happened before – compared to universities for example where you write thesis and masters on a lot of information that other people has collected during many years and so you're relating to that instead of what you're thinking (...)" (Annie, Danish 1<sup>st</sup> year student, Kaospilot programme)

Learning on the basis of given information from the past seems to be less stimulating for entrepreneurship students. Learners seek to connect to reality and what happens in this reality in the *present* moment. Moreover, their preference for learning in the here and now seems to be related to their wish to integrate their *own* thoughts and to think *independently* instead of working with ideas generated by other people, which is what is attributed to traditional ways of learning in a university context.

This preference seems to be mirrored in the learner's wish to work with lecturers sharing real life experiences with the class.

"(...) And **especially** if they have experience, if it seems credible (..) what they're saying and if they actually have experience in the field and can make examples, also if they are able to make it relevant for me – with their examples" (Daniel, 1<sup>st</sup> year student, Kaospilot programme)

It seems as if learners strongly seek to connect to potential real life situation. The lecturer thereby becomes a linking element and a kind of alternative connection to the world outside the classroom, who – through the use of real life examples – can succeed in making his or her teaching relevant to students.

Thereby, students state to better connect to the teaching if those examples are lived experiences of the lecturer and moreover, if those experiences are presented in an authentic and touching way which allows to personally engage with them.

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<sup>11</sup> Bold letters signify vocal accentuations by the interviewee

<sup>12</sup> Underlining is added by author to accentuate central aspects of the quote

"It's teaching that involves stories, maybe personal stories, things that our teachers has experienced themselves (...) There's a certain power in story telling that really – I can relate to – if it's just theory, if it's just a book with different numbers etcetera – it's really difficult for me to relate to – it's ok if it's theory but if its exemplified in real life situations and – hopefully – in good stories - then it becomes a part of me – I can put pictures on it – I try to imagine myself doing the same thing" (Matthias, Danish 1st year student, Kaospilot programme)

It nearly seems as if the personal stories of the lecturer allow the student to connect to it in a very intense way, where the subject is visualized and filled with life by the student up to a state of identifying with them and living them themselves – a process which seems to strongly stimulate learning.

Another stimulating source of learning seems to lie in the learners' wish to somehow create an inner connection to their self and their learning needs. Thereby, learning processes may happen through a teaching which allows a discovery and development of their person.

"Because it was something about personal leadership and it was really important for me – you can be a leader in so many ways – and you experience so many things about your personality – you discover so many things – that to me was the best (..) I used to study at university in my country and it was really theoretical – basic – and this is very often. And this [Kaospilot programme] is where you can use your body. You're used to just work with your mind, and here you can work with your body and your mind (...) and – you can develop yourself in many, many ways (...)" (Selva, Cuban 1<sup>st</sup> year student, Kaospilot programme)

Discovering and expanding the self is described as a highly valued form of learning as it enables students to understand themselves in a more *holistic* way by using what is described as mind *and* body. Learning may therefore be related to discovering and developing the self.

Regarding the ways in which education may be realised, there does not seem to be *one* best way to do so. In fact, the preferences for teaching methods and/or pedagogical elements to stimulate learning vary between learning individuals. Some prefer the telling of stories as outlined above and others need a balance of several means and methods to learn best. However, amongst the different possibilities to instigate learning and the different individual preferences for learning, there seem to be common aspects which are considered to stimulate learning across different methods.

"I think it's really different because I had several really good lectures but they don't look alike. I think it's mostly if they have a lot of energy, when they're present, when they speak with a good and present voice and also when they involve people – doing stuff or make them think of stuff – and just – so that they don't just stand up and say a lot of stuff"(Maria, 1<sup>st</sup> year student, Kaospilot programme)

The student above seeks to identify commonalities between lectures which stimulated her learning and thereby strongly relates to the lecturers' ability to personally connect to students through their simple presence (posture and voice) but also through the initiation of interactions and active learning by students. But a lecturer should also push students to "think of stuff" and should thus instigate independent thinking in contrast to offering a monologue on a subject.

We may conclude that despite *individual* learning preferences of each learner, entrepreneurial learning seems to be stimulated in a learning environment which leaves space for the development of certain personal qualities and ways of thinking. Firstly, through interaction with their social learning environment (peers and lecturers) as well as through trial and error processes in experiential learning situations, learners are allowed to gradually develop *self-responsible* learning in the low risk environment of the education. Secondly, through preferring lecturers with real life experiences and authentic and touching ways of sharing these experiences, learners seek to *connect* to the world outside classroom in a most realistic way. And thirdly, students state to learn through reflection processes and thus through lectures which develop *independent ways of thinking*. And finally, students seem to learn through introspection processes which allow them to explore and *connect to their self* and their learning needs.

Stimulation of Learning		
<i>Descriptive account of responses</i>	<i>Primary interpretation</i>	<i>Conceptualisation</i>
Social interaction with peers and lecturers	Testing and locating learning in safe learning environment	Learning through gradually <b>increasing responsibility</b> for learning
Experiential learning / apply theory		
Trial and error processes		
Reflection on applied learning	Learning through taking action	<b>Self-responsible</b> learning
Co-developing learning with lecturer		
Active learning processes	Initiating individual reflections	Learning through <b>independent thinking</b>
Learning through developing own thoughts and ideas		
Initiating questions, not giving answers		
Seeking real life experiences		Learning through <b>connecting to reality</b>
Preference for lecturers with real life experience		
Seeking real-time information		
Reflection on own learning needs	Introspection processes	Learning through <b>connecting to inner</b> learning and development <b>needs</b>
Seeking self development		

Table 13: Stimulation of Learning

Moreover, the data provides deeper insight regarding the extent to which the above mentioned learning preferences are naturally given or rather learned and developed through external influences. For example, as opposed to the general tendency to learn through developing independent thoughts, there is one student who states to learn best on the basis of predefined guidelines.

**Interviewer:** "How do you learn best? How does a good lecture look like?"

**Cidgem:** "When I have strict lines about what I am going to learn (...)" (Cidgem, Swedish/Turkish student, COEUR programme)

The need to think independently may therefore *not* be a naturally given quality of every learner. However, the data indicates that the wish to develop independent reflections as well as the wish to socially connect to others may also emerge as part of personal development processes stimulated through exposure to the respective environment.

**Cecilia:** "In gymnasium [meaning college], when I had math class – I think it had to do with the teacher, she was very strict and there were a lot of rules and you have to learn everything (...) I mean it's very old school but I just loved her strictness – but on the other hand, I also like this form of teaching where everybody has a say and you can kind of decide with everyone else"

**Interviewer:** Can you think of any commonalities – why do you like both ways of teaching?

**Cecilia:** It's so different, maybe it's because Gymnasium [meaning college] was so long ago – when I was seventeen and I really liked it because that's what I needed at that time but now after I have traveled and everything I need to have my own say(...)" (Cecilia, Danish 1<sup>st</sup> year student, Kaospilot programme)

The student's preference for learning seems to have shifted decisively in the past. Her initial preference for a teaching with little space for autonomy and independent reflections is attributed to her stage of personal development and the learning environment in which she grew up. At the age of seventeen she needed less autonomy to learn than she does now after having personally developed through interactions with the world in the scope of journeys. As traveling usually and naturally entails autonomous behaviour as well as most diverse interactions, the student probably developed towards a more independent individual. At the same time, she developed the need to stimulate learning through the development and use of these qualities in the scope of education. The data indicates that the way students learn best might be connected to their personal learning needs which in turn are connected to the level of their personal development and may change and develop in parallel to a personal maturing of the student. Looking at the above quotation, these maturing processes may be stimulated through education but also through other sorts of exchange with the world outside classroom like journeys and social interactions in general. But more importantly, this personal development process seems to be a one way development. The more the learner gains in live experience, the more she seems to prefer autonomous and self-directed ways of learning.

### 5.1.2 The lecturers' assumptions on learning preferences

In the following, the learners' constructions on how learning is stimulated are contrasted with those of the lecturers.

Thereby, one of the most distinct consistencies in lecturers' and learners' assumptions on how learning is stimulated refers to the idea that learning happens through interaction with the world and that entrepreneurial learning is closely related to experiential forms of learning.

"Learning happens by doing – **not** by hearing, not by reading but by doing – you know they say 10% of what you read you'll remember, 30% [of what you are demonstrated and 75% of what you do] – I strongly believe you have to do it (...)" (Aafke, Dutch lecturer, participant IMEET programme)

Entrepreneurial learning is considered to be a 'learning by doing'. Thereby, the 'doing' seems to be related to interactions with the social world inside and outside the classroom.

"(...) I have my own way of saying that learning is taking place in a space of inter-subjectivity where you interact – so, learning is very much situated and **depending** on the flow of interaction (...) but I think learning by doing is a very important part of it, by doing interaction with others" (Paul, Danish lecturer, programme director IMEET programme)

Basically, learning is assumed to take place through interactions with the social world and furthermore depend on the nature of these interactions which indicates that not every interaction initiates the same (entrepreneurial) learning process.

Thus, the interactions leading to entrepreneurial learning may have to be of an entrepreneurial nature, which means that a learning by doing may have to be related to the 'doing' of *entrepreneurial* activities. Hereby, entrepreneurship education provides space for trial and learning processes which allow students to test and allocate their learning in experiential situations.

"[Learning happens] When you put the theory into practice – you learn some kind of theory and then you try to see how it acts in practice – that's what I do as a consultant (...)" (Soeren, Danish lecturer/consultant, participant IMEET programme)

Through actively trying out the theoretical input in practical situations students are enabled to learn through trial and error processes within the low risk environment of the education. Furthermore, and in line with the students' perspective, learning is also considered to happen through the reflection on practical learning experiences.

"(...) But also where you afterwards had a project or a process where you **try out** those theories that you learned and after the project or a process you will actually reflect upon, what did I learn in the beginning how did I use the learning, and what can I take as a conclusion for myself, where do I have to improve, where do I have to look for the competences I need" (Tom, Danish lecturer, Kaospilot programme)

Reflecting on practical learning experiences is considered to be a highly valuable learning opportunity as it enables introspection processes and thus contributes to the personal development of the learner.

Furthermore, just as the learners indicated, reflection also enables the learner to create an inner connection to his learning needs which is part of a personal development process. Therefore, learning is not considered to be purely related to the acquisition of knowledge or information but should relate to the learners personal development as well.

"Teaching and learning – Well, there is for **me** – there's a process of developing within young people, knowledge, skills, understanding, **attitudes** and to some degree **personal qualities**. So I am trying to draw out some of that personal qualities. So it's not just about **knowledge** because knowledge tends to be quite **factual** or tends to link **facts** (...) it's basically about to develop young people in those five ways. So it's about giving them opportunity to **develop those**, that range of the skills, the understanding, the personal qualities Giving them a **range of experiences**, a range of **tasks**, a range of a different environments, so that they can take those **bits of knowledge** and **apply** them in a variety of circumstances, in different ways"

(Robert, English lecturer, participant IMEET programme)

As stated above, learning is not just about acquiring knowledge but very much about developing a certain understanding of things, a certain attitude and certain personal qualities – aspects which are all related to the individual development of the learner. Hereby, education provides opportunities for personal development in the scope of a *low*

*risk* learning environment and lecturers seem to strive to enable learners to autonomously apply their learning in multiples ways and most diverse situations. Thereby, the objective seems to be an education towards independent ways of thinking and making use of what they learned which very much accords with the learners' need to learn through independent reflections.

In line with this, both lecturers and learners seek to stimulate learning through finding own answers to questions and not to be given answers by the education.

"(...) [Learning happens] by departing from their own questions, which they [learners] are meant to find and discover – and by going ways in order to find answers" (Otto, German lecturer, SMILE programme, translated from German)

Learning hereby is closely related to independent reflections on what students would like to learn and how they would like to do so.

Moreover, what is considered to be at the basis of all learning processes in order to make learning happen, is an inner motivation of the learner to actually learn.

"(...) you have to be motivated – motivation comes out of doing – you have to see the necessity – and you have to do so. When I became an entrepreneur my real study was languages – I did know nothing about setting up a business – but the moment I did the things – I had to know – I got them let's say in 10% of the time I would have needed when I wasn't motivated – So motivation – intrinsic motivation (...)" (Jacques, Dutch lecturer, participant IMEET programme)

Intrinsic motivation is considered to be the essential driving force of all learning processes and may be created through exposing learners to practical experiences. Motivation to learn seems to be stimulated by becoming active and actually doing something and thereupon by taking responsibility for ones learning. This train of thoughts is very much in line with the students' perspective on learning which is reflected in their wish to create a connection to the world outside the education. Motivation may thus be created in the course of the education and does not necessarily need to exist before starting it. Thereby, a basic prerequisite to create motivation is that the learner can see *why* he or she should engage in a project or task and where their personal benefit lies. But also the task itself can create motivation.



"There are – for me a couple of things which are very important [to stimulate learning] – First that you have to look for assignments which will give students motivation – and that's also very hard (...) I have to design assignments which lead to **learn** (...) I think a good assignment leads to motivation" (Immo, Dutch lecturer, participant IMEET programme)

Creating assignments which initiate learning processes and motivate students to become active seem to be a crucial factor to stimulate learning.

Finally, the need to have independent reflections, to take responsibility for ones learning or to socially connect in order to learn, are not considered to be naturally existing qualities of every learner and lecturers admit that there are different learning preferences within every learning individual.

"Learning happens in all kinds – different ways – I mean we have different learning styles. Some learn from imitating some learn from more cognitive abstract reflection – some learn from interacting and networking – there's a lot of different learning styles" (Magrete, Danish lecturer, participant IMEET programme)

In the above quotation, the lecturer contrasts preferences for learning through imitation with learning through independent reflections and also the learning from social interaction. Thereby, she points towards differences in personal prerequisites and the fact that these qualities are not naturally given within all learners.

In addition to the assumption that learning can happen in many ways depending on the learners individual preferences, learning is also considered to happen in different stages over a certain amount of time.

"(...) we have different ability to learn and you have to be aware of that. Some are more visual learners, and some are more auditive learners – there are different kind of learning styles and at the same time I also think that learning goes through different kind of phases – from understood – to accepted – to take responsibility for it" (Karen, Danish lecturer, Kaospilot programme)

The learning process is considered to undergo different phases from the understanding of a subject up to the taking of responsibility for it. Interestingly, the above described phases of learning do not refer to processes of knowledge acquisition but to the development of personal qualities particularly the feeling of responsibility.

We may conclude that even though the assumptions of both perspectives on how learning happens seem to differ on particular issues, they both show consensus regarding the main stimulating aspects.

<b>Stimulation of learning – a comparison of both perspectives</b>			
<i>Stimulating aspects</i>	<i>Interpretation</i>	<i>Learner</i>	<i>Lecturer</i>
Learning through social interaction with peers and lecturers		✓	✓
Experiential learning	Learning through gradually taking <b>responsibility</b>	✓	✓
Trial and Error – Learning from practical application		✓	✓
Learning through reflection on applied learning		✓	✓
Learning through active contribution of learner	<b>Taking responsibility</b> for learning	✓	✓
Lecturer with professional experience as link to world outside classroom	Learning through <b>connecting to reality</b>	✓	x
Teaching that allows self-development / self-discovery	Learning through <b>connecting to inner learning needs</b>	✓	✓
Learning through interaction with social surrounding (peers, teachers)	Learning as a <b>social connection to others</b>	✓	✓
<b>Learning through authentic teaching / from authentic experience</b>	Learning through <b>personally and emotionally connecting</b> to lecturer – and through <b>experiencing</b> the lecturers' <b>knowledge</b>	✓	x
Intrinsic motivation to learn new things	Wish to learn & discover new things, open mindedness	✓	✓
Raising questions, not giving answers	Stimulation of <b>independent reflections</b>	✓	✓
Different learning styles	Learning <b>through</b> independent thinking or imitation/ <b>with or without</b> social interaction	✓	✓

**Table 14: Stimulation of learning – from lecturers and learners perspective**

Both lecturers and learners consider learning to be stimulated through interaction with the social world inside and outside the education as well as through connecting to inner learning needs. However, students attach much more importance to personally and

emotionally relating to the lecture and his or her experiences in life than the lecturers seem to be aware of. Hereby, they would like the lecturers' experiences to be an *alternative connection* to the world outside the classroom and would furthermore like to personally connect to the lecturers' life stories in order to learn by *living through* these experiences in a most authentic way.

It seems that through the lecturers' stories and told experiences, students in some way are able to *experience* this knowledge and in that way learn from it. Thereby it appears that the more authentic the experience of the lecturer is, the better students can experience this knowledge themselves and learn from it.

Furthermore, both consider learning to happen through taking responsibility for the learning and by actively contributing to the education. And finally, entrepreneurial learning may also be stimulated by developing independent reflections and ideas.

The lecturers seem to unanimously share the idea that entrepreneurial learning is closely connected to personal development processes and that the creation of intrinsic motivation within students automatically entails any required knowledge acquisition. Unlike the students' answers, there are no counterexamples or contradictory responses regarding the lecturers' assumptions on how entrepreneurial learning happens. For example, none of the lecturers believes that entrepreneurial learning can happen without social interaction or on the basis of purely theoretical teaching and knowledge input. However, the lecturers are aware of the fact that learners have different learning styles and preferences and that some may not prefer to learn in entrepreneurial ways.

## 5.2 Role understanding – The role of the learner

This main category gives insights into the social constructions of learners and lecturers on their role understanding. Thereby, it investigates expectations towards the self – when taking the role of a learner or the role of a lecturer – as well as on those expectations constructed towards the role of the respective other. It explores eventual analogies or discrepancies between or within the understanding of these roles. This dimension provides essential insights. The social constructions a learner possesses

towards his or her role as a learner impact on assumptions towards how and in what way those perceive their role in the learning process as well as their potential to contribute and stimulate this learning process. In turn, a lecturers' understanding of his or her role as a lecturer gives insights into how those believe to be involved in the stimulation of learning processes and more precisely the stimulation of entrepreneurial learning processes.

### 5.2.1 Student's expectations towards their role as a learner

Starting with the students' assumptions on their role as a learner, a major aspect that clearly emerges from nearly all participants is their felt duty to actively participate in the education.

"My role as a student is to – you have a responsibility to follow the course that you want to do – and be prepared for the lectures – maybe have some overview of what you're gonna learn or what you're gonna do (...) so both preparation and be present during the classroom" (Jostein, Danish student, Kaospilot programme)

The student explicitly highlights the responsibility that learners bear in the learning process and that their role is to actively make use of that responsibility by engaging in the education. Furthermore, this feeling of responsibility is mirrored in students' strong intrinsic motivation for their learning.

"(...) you should be there because you want to be there" (Helena, Swedish student, COEUR programme)

"To make an effort and to be motivated through it all (...) Be more explorative like **explore** – if you think something is stupid – explore like what is this actually about (...) but being motivated to **learn** and being motivated to **understand** why you do it like you do"(Joanna, Danish 1<sup>st</sup> year student, Kaospilot programme)

Being motivated to learn and really wanting it from the inside is part of their role understanding and presents the learners' stimulation to learn. Learning therefore seems to be something coming from the inside and thus something very personal anchored in

the individual. Hereby, students demonstrate an even emotional attitude towards their learning as part of their intrinsic motivation.

"My job as a student in education – to be there, to be attentive, also I think it's a lot of passion as well (...) and definitely believe in education – so, be passionate and interested and curious" (Paul, Danish 1<sup>st</sup> year student, Kaospilot programme)

Being interested and motivated to learn seems to be connected to positive and driving emotions like passion for the learning and also seems to be an integral part of their role understanding.

Moreover, the students' feeling of responsibility for their learning, seemingly based on their intrinsic motivation to learn, even goes beyond their individual learning and entails the wish to contribute to the learning progress of their classmates.

"[My role is] to learn and to learn within the group and with the team. So, it's not only about my learning – it's about a sharing process – where others can learn from – me as well – and contribute" (Albert, Danish 1<sup>st</sup> year student, Kaospilot programme)

The student above perceives his role to consist in an active contribution to a social learning process through exchanging with his classmates. Thereby, they demonstrate responsibility for the learning of their social surrounding – a responsibility that goes beyond their own learning and that enables them to influence and change the education in a way they consider to be valuable.

"First of all, it's commitment to what I am doing – it's taking action if I feel or sense that things are not inspiring for a lot of people – see if we can push things in a way were it creates more value for the learning (...)"(Matthias, Danish 1<sup>st</sup> year student, Kaospilot programme)

The role understanding of this student is to become active and influence on the education in order to add value to it for the entire group. By trying to enable a most valuable learning for their social surrounding, students demonstrate a feeling of social responsibility going beyond their personal learning process. This feeling of responsibility also includes their felt duty to report back to the lecturer in order to help him or her develop the education in a most valuable way towards the learning needs of students.

"What the students need to give is feedback to the teacher because he also needs feedback from the students – 'Am I on the right way?' – I think that's important that students give feedback in one way or another" (Jan, Swedish student, COEUR programme)

By reporting to the lecturer where students actually are in their learning process they socially connect to the teacher in a way that enables him or her to understand their learning needs and thus to improve and adapt the teaching to the learner. At the same time, by socially relating to the lecturer, students are enabled to give valuable and constructive feedback which necessarily contains their own and independent reflections on the education. So, giving constructive feedback to lecturers appears to be a process of socially connecting to them in order to express independent reflections on the education. And at the same time, by wishing to do so, students demonstrate a feeling of responsibility for the valuable development of the education.

However, a feeling of responsibility for learning does not seem to be a natural quality of all learners. A small number of students do not relate their role to responsibility for their own and their classmates learning.

"[My job is] to listen, learn and respect the teacher – even if you don't understand it – even if the teacher is not – no matter what he is – you should respect it and make him comfortable with what he is doing"(Cidgem, Turkish/Swedish student, COEUR programme)

The student above describes the learner's role as uncritical participant of the education who should follow and accept the lecturers' opinion. Feeling responsible for ones learning may not be a natural role understanding of every learner. However, it seems to be a quality that learners may learn and develop.

"In the beginning I actually just thought it [my role] was to learn – but now I found out it's to learn but also to be present and create my own learning – so, more like take responsibility about stuff that I learn – like that I have a big influence on how all the stuff is being done – especially in this school where the students are very big part of the learning process – we're not just supposed to like have a teacher tell us how it is and now read a book and then you learn it – we're more into like asking questions like "why is it like that", "how can you use it", just be curious all the time (...)" (Maria, Danish 1<sup>st</sup> year student, Kaospilot programme)

The student above completely changed the understanding of her role as a learner from being passive to becoming active. She seems to have recognized her possibilities to

influence the education and create her own learning through taking responsibility for it. The development towards a responsible learner seemed to be a more valuable and thus more attractive option. Hereby, a decisive driving force is attributed to the education. The student points out that the education strongly encourages learners to actively take responsibility for their learning and to develop their own and independent reflections on subjects.

On that basis, a further essential quality emerges. Taking responsibility for one's learning is closely related to the learners' ability to develop and act on *independent reflections* and to critically consider the education. Again, referring to the quotation above, the student emphasises to have learned to question and explore subjects by asking "(...) why is it like that – how can you use it – just be curious all the time". The fact that learners actively take the leadership for their learning, that they develop and influence their education into a direction they consider to be valuable consequently requires the capability to critically and independently reflect on where they would like to take the education and on what is considered to be a valuable learning outcome. Moreover, independent thinking is needed to identify an education that does not seem to add value to the individual or group learning and in order to influence it in a direction which appears valuable to them.

Having independent reflections may be derived as a logic prerequisite to a pro-active and responsible behaviour which is part of the learners' role understanding. But being critical towards the education, questioning it and developing own thoughts on one's learning also is directly pointed out by the learners as a central aspect of their role understanding.

"(...) student has to be critical and ask questions – I think it's the most important thing"  
(Vaidas, Lithuanian student, COEUR programme)

The student above describes ability to think independently as most important aspect of the learners' role in the education. Furthermore, this ability seems to be anchored within some learners as a kind of intrinsic need.

"(...) I asserted that it's really bad to believe everything that lecturers say because they are only human and also make mistakes which happened often enough (...) what I want is to actively discuss things – what I like or what I dislike about them or which possibilities there are –

so, I don't want to just sit and listen but I want to become active myself – think on my own in other words" (Diana, German student, SMILE programme, translated from German)

Learners express their need to 'think on their own' which is what they understand as the essence of their role in education. At the same time, previous experiences with lecturers seem to have contributed to students' want for independent thinking and their wish to form their own view on things as the lecturers' opinions have proven to be wrong in some cases.

Others describe it in different terms and state their role to lie in an open minded and curious attitude towards education in order to realise and explore eventually valuable aspects whose value was not obvious in the beginning.

"To come in with an open mind and – willingness to learn (..) or willingness to **find** my own angles on things, even though they don't seem that interesting to me in the beginning" (Solveit, Danish 1<sup>st</sup> year student, Kaospilot programme)

Being open towards new and maybe unusual elements of an education and constantly seeking a value for the learner in what was learned requires a capability to independently reflect on learning. Furthermore, it means not to depend on other peoples' opinion and to make own judgments on the teaching by finding "own angles" on things.

Again, there are a few counterexamples of learners who do not seem to relate independent thinking to their role as a learner and who do not naturally possess a need to do so.

"[My role in education is] Repetition of what was learned – application of abilities for problem solving" (Alex, German student, COEUR programme)

The student above does not attribute any independent reflections to his role as a learner but describes it to be a replication of learning which restricts his task to a passive and uncritical application of knowledge. Others indicate a lack of independent reflections based on a strong dependency on the lecturers' opinion and the wish to please him or her.

"(...) make the most of the time with the lecturer, learn as much as we can from the lecturer and do as much other work as you can outside of the teaching to ensure that you can get the best you can to show him that you can do it and that the teaching was worthwhile (...) you



want to work for them – want to do well for them – show them what you can do" (Steph, Scottish student, COEUR programme)

The wish to "work for them" and to "do well for them" points towards a strong focus on living up to the lecturers' expectations in contrast to developing own and critical thoughts on the subject. The above expressed dependency on the lecturers' demands does not seem to limit learning in general and on the contrary seems to present a strong incitation to learn, while at the same time it does not seem to lead to independent reflections. However, whether critical reflection is involved or not, learning still is based on a process of *dialogue* – in this case between learner and lecturers – and thus seems to be an *essentially social process*. Thereby, the quote points towards possible interdependencies between lecturers' expectations towards learners and the learners' social constructions on their role understanding as a result of this social interaction process. The table below summarized the above argumentation.

<b>Role of the Learner I</b>		
<i>Descriptive account of responses</i>	<i>Primary interpretation</i>	<i>Conceptualisation</i>
To be active / to participate / to ask questions		
Willingness to learn / Intrinsic motivation / passion	Taking <b>responsibility</b> for <b>own</b> learning / pro-active contribution to learning process	<b>Taking responsibility</b> for learning as consequence of <b>independent reflections</b> on preferred learning outcomes
Responsibility for learning / Autonomous learner		
To be proactive – get the best out of lecture		
To create own learning /to contribute to and influence on education		
To contribute to group learning / exchange and share learning with others	To take <b>responsibility</b> for <b>group</b> learning	
To facilitate teaching for lecturer / to help adjusting it to learning needs		
	Create <b>social connection</b> to lecturer to develop teaching	Social connection to lecturer enables expression of <b>independent reflections</b> on education
To give constructive feedback to lecturer / to help improve teaching		
To be curious to social surrounding and learning opportunities	<b>Open mindedness</b> and <b>curiosity</b> to recognize valuable learning	<b>Independent thinking /</b> critical reflections towards education
To be open minded to recognize eventually valuable teaching		
To be critical / reflexive / to question education	To <b>critically</b> reflect on learning	
<i>Recipient of education / to listen and learn</i>	<i>Passive and uncritical consumer of knowledge</i>	
<i>To achieve knowledge</i>	<i>instead of active creation of learning</i>	<b>No development of critical and independent reflections</b> on learning
<i>To apply what you learned / To reproduce what you learned</i>	<i>Uncritical application of learning</i>	
<i>Accept teacher's opinion / show him you can do it / you want to do well for him</i>		

**Table 15: Role of the Learner I**

As most obvious personal quality related to students' understanding of their role as a learner emerges a responsible and pro-active attitude towards their learning including a contribution to the learning of their social surrounding. Thus, students would like to actively contribute to the learning process – a process that seems to be profoundly social and based on dialogue.

Furthermore, the ability for critical and independent thinking emerges as a further element of the students' role. The need for this quality is expressed in two ways: One is to stand up for their values and identify desired learning outcomes. The other objective

of independent reflections is to critically analyse the knowledge that is provided in the education and that emerges from the social exchange with peers and lecturers.

Independent thinking thereby emerges as underlying driving force in the learning process and as essential quality of the learner. While all learners seem to perceive learning and their role in the learning process as profoundly based on social exchange, some learners don't seem to have developed independent thinking at the point of the interview. And others seem to have learned it in the course of their education either through positive incitation or based on negative experiences with lecturers, which both encouraged them to think on their own. Thus, independent thinking seems to play a key role in entrepreneurial learning in that it can shift the dialogue amongst peers and lecturers to another level of discussion – from pure knowledge consumption to critical analysis and co-development of that knowledge. And even though it is not a naturally developed quality of all learners it seems to be learnable and may be stimulated in different ways.

### 5.2.2 The lecturers' role expectations towards students

In line with the students' understanding of their role as a learner, the lecturers primarily expect them to take responsibility for their learning and to demonstrate a pro-active behaviour.

"Their role is to battle – to fight for the learning (laughter) – I mean I can't just put it in their mouth – they have to do their own learning" (Marianne, Danish lecturer, participant IMEET programme)

Lecturers want students to 'fight' for their learning, which means they have to become active and take responsibility for what they would like to learn. As a prerequisite to take action, students are meant to explore the objectives they would like to realise.

"Their role is to discover their personal objectives and thereupon to develop a will to act" (Otto, German lecturer, SMILE programme, translated from German)

Exploring and defining their individual objectives is considered to be part of the learners' role and based on these objectives students are meant to develop a will to learn and to

act on these objectives. To support the development of these qualities, lecturers try to adapt the pedagogical framework accordingly.

"That's like some of the pedagogical principles, that we work with here very much. First of all – you're not given an education here – you take one – so, we are very focused on the student responsibility (...)" (Hendrik, Danish Programme director, Kaospilot programme)

The lecturer outlines that the education of a responsible behaviour is an essential expectation towards the role of the learner and therefore is part of the school's pedagogical approach. Interestingly, the lecturer's quote is more than just in line with the students' statements – it is even *identical* with several of the answers from students of the same programme.

"(...) I'm not given an education but I am taking it – so I am responsible for what I learn in here" (Anna, 1<sup>st</sup> year student, Kaospilot programme)

"(...) you have to take the education – you're not given one (...)" (Cecilia, Danish 1<sup>st</sup> year student, Kaospilot programme)

As shown by the above quotations seem to have fully internalized the schools' values. Hereby, the influence education seems to have on the learners' values and their role understanding in education becomes apparent. Others have not yet fully adapted to these values and are still aware of the fact that those are passed on by the education.

"(...) They say here 'to take the education' and 'to be open minded'" (Thor, Danish 1<sup>st</sup> year student, Kaospilot programme)

The student above realises that the expectations towards his role as a learner are suggested by the education and still distinguishes them as values coming from outside. Again, there is strong indication of the impact that education seems to have on its learners. Education apparently possesses the potential to develop personal qualities within learners such as a feeling of responsibility.

However, besides a role as responsible learner lecturers do not explicitly expect students to take responsibility for the learning of the *group*. None of the lecturers emphasized students' responsibility to co-develop learning and to try to create value for the entire class. But still, lecturers would like students' feeling of responsibility to include a reporting to the lecture to help him or her improve the teaching.

"[Their role is to give] appreciative, constructive feedback – and I hope that they will widen my horizon – but not only because of the curriculum but also about the **world** (...)" (Anja, Danish lecturer, participant IMEET programme)

In line with the students' view, those are meant to socially connect to the lecturer to share their own opinions and independent thoughts on the education in a constructive and appreciative way. Furthermore, the lecturer above expects to benefit from this social exchange to an extent that it 'widens her horizon' and enriches her understanding of the taught subject and even her world view in the broader sense.

Developing and expressing independent reflections hereby emerges as a further quality which is part of the role expectations by both lecturers and learners. Like most of the learners, the lecturers also expect learners to be open minded and curious towards eventually valuable teaching.

"They have to be present at lectures – they have to be curious to the people in their lecture and also to the content and they have to start using this in their daily situation (...) We at the Kaospilots give them the chance to try out" (Tom, Danish lecturer, Kaospilot programme)

Learners are meant to be curious about teaching and lecturers in general in order to find out what might be of use for them. Therefore, they need to be open minded towards the potential added value of the education for their later life. Furthermore, the role of education is perceived as a possibility to try out and test knowledge within the risk-free scope of education.

When being asked about the role of the learner in entrepreneurship education, lecturers accentuate that learners should *not* live up to typical role expectations of a student.

"For example, normally, when I teach, I think most students play the role of students and I play the role of the teacher. But sometimes, there is for example on saturday we invite new students and then we work together. And suddenly on this Saturday – it's a weekend – you see the same students but not acting as student – but **thinking** and **acting** and that's the kind of behaviour I am trying to get into the week. That's very difficult" (Immo, Dutch lecturer, participant IMEET programme)

Lecturers would like students to act as if they possessed qualities which are not naturally attributed to students. Hereby, the lecturer specifically refers to the ability to think on

their own and to take actions. Both seem to be qualities which education does not demand from learners and which the traditional role understanding of lecturers and learners in the scope of the education seems to hinder.

"Students should be pro-active and **be an entrepreneur** but most of the time they are just waiting for instructions of me or of other people to tell them how to conduct their business. (...) Actually they have to take on another role that they're not used to – when they're used to sit back and write things down and – they have to change it" (Peter, Dutch lecturer, IMEET programme)

Being pro-active and taking actions on their own does not seem to be a natural quality of learners. Furthermore, students are not considered to be used to behave that way as education apparently does not always support the development of these qualities. The role that lecturers would like students to take appears to be incompatible with some of the qualities education instigates within learners.

To sum up, lecturers would like students to overcome the role of a passive consumer of education and to actively and autonomously take entrepreneurial actions. Thus, a critical way of thinking and questioning the education is not explicitly expressed by lecturers, while being open minded and curious in general seems to be strongly encouraged. The development of these qualities seems to be specifically difficult in the scope of the education as traditional role behaviour of lecturers and learners conflicts with entrepreneurial behaviour.

Comparative Analysis of Perspectives on Role of the Learner			
<i>Summary of responses</i>	<i>Conceptualisation</i>	<i>Learner</i>	<i>Lecturer</i>
Active participation in learning process / Self-responsible learner	Self-responsible learner	✓	✓
Contribute to group learning / Co-develop teaching	Socially responsible learner	✓	X
Give feedback to lecturer / help improve teaching	Socially connecting to lecturer	✓	✓
Be curious and open minded to realise valuable learning		✓	✓
Be critical and question the education	Independent and critical reflections	✓	X
Focus on learning process, be open to change and development		x	✓
<i>Achieve knowledge / Apply learning</i>	<i>Uncritical and passive consumption &amp; application of learning</i>	✓	X
<i>Listen and learn / Do what teacher says</i>		✓	X

**Table 16: Comparative Analysis of Perspectives on Role of the Learner**

The role of the learner in entrepreneurship education is very much related to the taking of responsibilities and the development of independent reflections. Hereby, learners additionally see their role in taking responsibility for the learning of their classmates and also include *critical* thinking and the questioning of education in general into their role expectations. While not all of the learners have developed these qualities, those may be stimulated – particularly through education. However, all of the lecturers would like students to demonstrate independent ways of thinking and a self-responsible behaviour.

### 5.3 Role understanding: The role of the lecturer

According to the social constructivist paradigm learners are supposed to actively construct learning and to be entirely responsible for it. Based on this assumption, what can the role of the lecturer be in the learning process? In what way may he or she impact on the stimulation of learning if responsibility for learning is with the learner? What is actually the contribution of the lecturer to entrepreneurial learning processes? And is there a discrepancy between the role they are attributed by students and their own role perception? The following section presents the expectations towards the role of the lecturer from both perspectives – learners (4.3.1) and lecturers (4.3.2).

#### 5.3.1 The learners' expectations towards the role of the lecturer

The learners expectations towards the role of the lecturer are diverse and multiple. However, they very much relate to the learners constructions on how learning is stimulated (see 4.1.1) by expecting the lecturer to act on this understanding.

##### *Creating a connection to the classroom*

In order to stimulate learning within students the most obvious expectation towards lecturers is related to the learners' wish that those enter into a direct communication with the learner.

**Ralf:** Well, first of all, the big difference from sitting in a room with 250 students you are feeling a bit anonymous and you feel like there's no really direct link between you and the teacher compared to the law school – and if you are hearing all the staff you can't be anonymous at this school [Kaospilots] – so I think that has given me a better education platform for ongoing conversation with the staff and the teachers

**Interviewer:** But what is his [the lecturer's] task in education?

**Ralf:** It's to have this dialogue with the students – I think it's the most important thing for a teacher to have"

The student above clearly refuses an anonymous teaching situation where no interaction with the lecturer is possible. Learners would like lecturers to establish a social connection to students through directly communicating and exchanging with them. Furthermore, this interaction is important for learners as it enables the lecturer to explore their learning needs and to adapt to their rhythm and learning interests.

"They [lecturers] have to consider **who** it is they are teaching something to – you can't just have one way of teaching – especially if you are consultant or something – you can't just use the same way of doing things with old business men or with people like us (...) and then when they're teaching here [Kaospilots] or just anywhere – I think it's just important to meet people where they are and to keep everybody interested and make sure that everybody is paying attention – and create this personal – like look everybody in the eye (...)" (Cecilia, Danish 1<sup>st</sup> year student, Kaospilot programme)

Lecturers are challenged to be flexible and to adapt their teaching to students learning needs. They should possess the ability to understand how and in what way they may stimulate learning by using appropriate ways of teaching which is only possible if they succeed in connecting to all students.

#### *Creating a personal connection to each learner*

Furthermore, regarding the social connection that lecturers should create to students, this relation is requested to be of a very personal nature.

"I need to have a personal communication with the person who is having this lecture (...) I need to have a contact – I need to get the whole attention – so, to me this is very important" (Selva, Cuban 1<sup>st</sup> year student, Kaospilot programme)



Students would like lecturers to enter into a close relation to their learners. They would like them to relate to students with the subject they teach about as well as through their way of communicating. Furthermore, in order to truly understand the learning needs of students, lecturers should possess the ability to take the role of the learner and see the challenge of the education through his or her eyes.

"Quite often, we get the impression that the lecturer forgot how it was to be a student – and he lost his sense of how hard it is in the beginning and of what people think in the beginning when they're thrown into all that for the first time" (Karl, German student, COEUR programme, translated from German)

Being able to take the learners' perspective and to understand what they think and feel, is necessary to create an education which appeals to them and awakes their interest to learn. Thereby, lecturers should be capable of communicating *why* students should have an interest to learn about a subject.

"[The lecturer's role is] to make it relevant to the students – personally – so that the student can see why this subject has an impact on his or her life" (Penilla, Danish 1<sup>st</sup> year student, Kaospilot programme)

Students want the lecturer to create the link between the subject and its relevance for the individual learner which demands the ability to understand what may or may not be relevant to each student.

Furthermore, a reason why students want lecturers to establish this personal connection to them is that they would like the lecturer to accompany and spur their individual development.

"Well, that [the lecturer's role] is to guide me and help me develop my potential" (Thor, Danish 1<sup>st</sup> year student, Kaospilot programme)

Lecturers are meant to support the personal development of students towards their individual potential. Furthermore, as part of this personal relationship which lecturers are meant to establish with students, they should also disclose their *own* personality and authentic self in order to better relate to students.

"[lecturers should] use themselves – tell about their own experiences and not only the successes but also the failures – you know like look into peoples' eyes and tell all the true stories to them – like they mean it" (Metti, Danish 1<sup>st</sup> year student, Kaospilot programme)

Students seek a personal connection to the lecturer but also expect those to reveal true experiences – whether successful or not – which enables students to personally relate to what they say.

To sum up, lecturers are expected to establish a close connection to students by exploring their learning needs having the overall objective to help them develop their individual potential.

#### *The understanding of the lecturer's authority*

Moreover, lecturers are expected to take care *not* to lose their connection to the classroom which is linked to the understanding of their authority in education.

"Respect – I have teachers that you don't have any respect for and they lose their connection with the classroom and it becomes messy – he still needs to be the one in charge and you still should really want to listen to him" (Jan, Swedish student, COEUR programme)

Lecturers are expected to keep connected to the classroom to know what is going on and what is needed to stimulate learning. Thus, creating the bond with the learner is not a one-time effort but a continuous process. Apparently, a certain authority is attributed to the lecturer. But this authority is related to a feeling of respect which seems to naturally and voluntarily be shown to the lecturer as someone who is not superior to students and who focuses on *their* learning.

However, this perception of the lecturer is not shared by all students. Some would like the lecturer to take a more authoritarian role and do not want him to personally relate to students.

"(...) furthermore he [the lecturer] should have communicated a predefined learning objective that he masters well – there should also be a certain distance to the learner – in the sense of respect" (Alex, German student, COEUR programme)

Instead of connecting to students learning needs, the student above would like the lecturer to keep a distant relationship to the learner. Hereby, the understanding of

respect in front of a lecturer is not of a natural nature but expressed in a distant relationship.

### *Connecting the education with reality*

Moreover, to keep connected to the classroom lecturers should not only be connected to students learning needs but should also be able to relate to the world outside the classroom. As outlined in 4.1.1 (Stimulation of learning), learners strongly seek to connect to reality and present events and thereby seek practical experiences in order to stimulate entrepreneurial learning processes. The lecturer thereby presents a linking element and should have had real life experiences him- or herself in order to allow a best possible connection to reality.

"(...) teacher should have experience in that subject – he know what he or she teaches marketing and know what we did and knows just about it from studies and studying bachelor or master degree but never applied it in real life so how he or she will be able to teach me it – that I really learn?" (Vaidas, Lithuanian student, COEUR programme)

The lecturer should possess real life experiences to satisfy students' need to understand the practical application of learning and to connect to the world outside the classroom. A lecturer with purely theoretical knowledge is not considered to allow the learning processes students wish to have.

### *Instigating learning processes*

Students seem to expect lecturers to motivate them for learning and to awake their interest for the subject by being interested and passionate about their subject themselves.

"I think the most important thing is to carry learners away – to motivate them, to awake interest and to transfer the feeling 'I can do this, I am interested in this and its valuable' (...) And it's important that the lecturer is competent in the subject and really likes to work with it (...) the lecturer should really be standing behind the teaching with euphoria and should get this across (...)"(Kathrin, German student, SMILE programme, translated from German)

Students would like lecturers to motivate them for learning whereby motivation and being passionate and enthusiastic seems to be closely linked. It seems as if learners want

lecturers to induce intrinsic motivation to learn and thereby pass on the responsibility to initiate their learning processes to the lecturer. The following quote helps to deepen the learners understanding of motivation as part of the lecturer's role.

"I think his role is really to inspire students to do things, because we had the lecturer with Thomas today and before that our group was really frustrated with the idea and he like teached us how to be enthusiastic and he showed us way how we can get and we got feedback from other people and we knew what we have to work on and we got inspired to continue working on our idea. So I think a teacher has the role not so much to teach but to inspire and students will learn by themselves (Lithuanian girls, COEUR)

Students would like lecturers to inspire learners to start learning. Hereby the term 'inspiration' reflects the idea of *initiating* learning processes rather than guiding and dominating them throughout the process. Through being an inspiration for students, lecturers stimulate and spur a learning process which is then led by students under their own direction. Lecturers are thus expected to be a start-up aid towards a self-responsible learning by inducing them the motivation to learn.

#### *Instigate independent thinking*

And finally, learners would like the lecturer to allow them to encounter new things, to be surprised and thereby learn through questioning their previous assumptions.

"(...) it always depends on the lecturer. It [narrations of lecturers] should not be too long because you somehow stop listening and it should be exciting (..) and should invite you to ask yourself questions – that you are confronted with things, that you wouldn't have expected" (Kathrin, German student, SMILE programme, translated from German)

Learners do not seem to want to rest on what they already know and master but they want teaching to be challenging and to guide them towards new reflections and the questioning of the existing. Thus, the instigation of independent reflections also seems to be part of the role expectations towards the lecturer.

<b>Learners' Perspective on the Role of the Lecturer</b>		
<i>Descriptive account of responses</i>	<i>Primary interpretation</i>	<i>Conceptualisation</i>
Adapt to students learning needs / connect to classroom / keep connected		
Pedagogical skills / different teaching methods	Ability to create <b>social connection</b> to and amongst all learners to understand learning needs and initiate learning	Should be able to <b>connect</b> to: - <b>Each learner</b> / learning needs of <b>classroom</b> - The world <b>outside</b> the <b>classroom</b>
Involve all learners / Initiate interaction		
Ability to take perspective of learner		
Be naturally respected by learners /learners should want to listen to him		
Initiate and give feedback		
Be authentic / show personality	Should relate to students on a <b>personal level</b>	
Personal relationship to students		
Be up to date on subject	Should be <b>connected to reality</b> and present events	
Should possess real life experience		
Provide possibilities to apply learning		
Keep distant relationship to learner	<b>No</b> wish to personally relate to lecturer	<b>No</b> creation of <b>social connection</b>
Realise individual potential / support self-development	Explore <b>individual potential</b> of learner	To spur <b>self-development</b> of individuals
Give guidance / help develop potential		
Create motivation to learn / awake interest and curiosity	Should <b>motivate</b> to learn / Responsibility to initiate learning process with lecturer	Should educate towards <b>self-responsible</b> learning
Be passionate about the subject		
Inspire learners		
Raise questions and critical thinking	Help to <b>question</b> the existing	Instigate <b>independent thinking</b>

**Table 17: Learners' Perspective on the Role of the Lecturer**

The learners' expectations towards the role of the lecturer very much focus on the creation of a connection to students and the classroom as a whole. They expect the lecturer to explore their learning needs and to personally connect to them through demonstrating passion for the subject and by using authentic ways of sharing their own experiences with students. Thus, this connection seems to be of *personal* and *intellectual* nature and enables lecturers to realise their central role as initiator of learning processes through the creation of motivation and by inspiring students to learn. Through inducing intrinsic motivation to learn, lecturers educate self-responsible and autonomous learners. Furthermore, students would like lecturers to establish a very personal connection to them in order to explore and develop their individual potential and to support self-development processes. However, one learner would like to keep a distant

relationship to the lecturer. Moreover, students would like the lecturer to open their mind and inspire them for new ways of thinking and perceiving the world.

### 5.3.2 The lecturers' expectations towards their own role

Very much in line with the learners' perspective, lecturers would like to connect to students learning needs and thereby admit the necessity to adapt to the *individual* needs of each learner.

"(...) the focus should be, **should be**, on the individual learner, their individual needs, so where they are good at something or bad at others is out there on individual needs. And facilitating or creating opportunities for those needs to be satisfied, improved, developed to a higher level – so it becomes less the role in the formal sense of teacher and learner and we are talking in England about learning – so teaching is not the major focus – its learning that's the major focus" (Robert, English lecturer, participant IMEET programme)

Instead of focusing on teaching in the traditional sense of lecturing on a subject, lecturers would like to focus on learning and thus on the learner and his or her individual learning needs. Thereby, the traditional role understanding of a lecturer as someone transferring information to the learner is clearly refused and replaced by a role understanding which investigates the learners' expectations and seeks to develop their potential.

"(...) I don't like traditional lectures where I lecture for 2 hours in a row and then they leave the room – basically more in the way that I provide them with something and that one way or another they try to use – we try to use true concepts – describing concepts – describing business models and not trying to force them to write business plans – because – very often they are in a very early stage with the ideas or in the learning process and I think it's too much of a burden to ask them to write a business plan because it's just too much and they have problems seeing the point of it" (Ken, Danish lecturer, participant IMEET programme)

Instead of simply providing learners with information, lecturers would like to connect to learners with their teaching and to provide useful and practical learning. Just as the students wish to connect to real life events, lecturers would like to provide them with 'true concepts' and 'business models' taken from the world outside the classroom.

Moreover, and again in line with students expectations towards the lecturers' role is that their teaching should have a visible benefit for students in the sense that they should understand why the education is useful for them. Furthermore, lecturers seem to see their role in helping students to uncover their individual objectives and in enabling them to realize these objectives.

"I think I can make sure that people find their passion – this is how I see my role – I accompany students in finding their passion – and – then I hope that they are able to create their own future (...)" (Hilda, Dutch lecturer, participant IMEET programme)

Lecturers would like to help students discovering their true passions and interest. And in the long run, they would like to help students to help themselves – which means helping them to become autonomous and independent from education and to create their future on their own.

However, unlike the students' expectations, the lecturers do *not* see the demonstration of passion for their subject as part of their role, nor do they consider a personal relation to students, the sharing of their life stories or emotional ways of expression to be part of their role.

Still, lecturers are supposed to possess the capability to take the role of the learner in order to understand learning needs from their perspective. The difficulty of this role reversal becomes apparent in the scope of the IMEET master programme where educators step into the role of learners.

"My role is [...] to install **double-loop** learning among the students because they are – at the same time – teachers and consultants as well as they are students at IMEET. So, on the one hand we have the programme for **them** but at the same time they **mirror** (...) – they are teachers and consultants but they are also **students** (...) on one side what they are doing and what **we** are doing is what is also going on in learning situations for those who they are going to serve – So we have a double agenda here (...)" (Paul, Danish lecturer, director IMEET programme)

A lecturer from the IMEET programme referred to this challenge and confirmed the importance to be able as a lecturer to take both roles to better relate to students learning needs.

"I think it is very good to be in the role of the learner now – to feel like a student again - because my students too – they experience such a learning process and me too – I experience a

learning process for myself – but I always think about how I may apply this in my class in order to make sure that students benefit from this" (Hilda, Dutch lecturer, participant IMEET programme, translated from German)

This train of thoughts is very much in line with students' expectations towards the lecturers' role and their experience that lecturers may lose the connection to the classroom and students' learning needs. Being capable of assuming the role of the learner therefore seems to be a vital prerequisite for the lecturers and obviously can be achieved through actively taking the role of a learner again.

Furthermore, when it comes to describing the expectations towards their own role, lecturers try to dissociate from the term 'lecturer' or 'teacher' and introduce alternative terms to describe their role.

"I see my role as a lecturer more or less as a facilitator (...)" (Ken, Danish lecturer, participant IMEET programme)

"The role of the lecturer is really a facilitator" (Robert, English lecturer, participant)

Very much in line with most students understanding, lecturers see themselves as someone facilitating learning processes rather than teaching about a subject, lecturers try to avoid the expression teacher or lecturer as it refers to traditional ways of teaching. The following quote emphasises how little a notion of authority is part of this role understanding.

"In a sense we are colleagues – all of us – I may have more experience than they have and the way which I pass on the information is by being a good example of what I'm talking about"(Marianne, Danish lecturer, participant IMEET programme)

Calling herself a colleague exemplifies how little lecturers seek to establish an authoritarian relationship to students and how much they try to relate to them on whatever learning level they are.

So, some call themselves 'facilitator', others use terms such as 'coach', 'advisor', or 'colleague with more information', but they avoid calling themselves a teacher or lecturer. And what their alternative role descriptions have in common is that they seek to express a stronger connection to students and their learning needs. The connection they



would like to establish is a more personal one, seeking to support their personal development on an individual level and neglecting hierarchical differences. It seems as if they would like to connect to students on an individual level in order to help them achieve their objectives on their own – enabling them to be *independent* and to discover and realise their individual objectives.

Furthermore, in line with the students' perspective, lecturers consider their role to lie in initiating a motivation to learn. While students seem to pass on the responsibility for the creation of motivation to the lecturers, those indeed assume responsibility for this task.

"To make them enthusiastic and make them motivated (...) not telling them what to do but creating circumstances that they want to know it by themselves" (Jacques, Dutch lecturer, IMEET programme)

Hereby, the objective is to induce intrinsic motivation which will lead learners to become active and to develop towards an autonomous learner who is finally taking responsibility for his or her learning. As outlined in the lecturers expectations towards the role of the student (4.3.2), lecturers consider intrinsic motivation to be the driving force for self-responsible learning activities and they consider the creation of this motivation to be part of their own role – for example through assignments which motivate students to learn.

"**Immo**: My role as lecturer is to make **really** good assignments (...) I have to design assignments which lead to **learn** – So, my idea is that the relationship I have to students – is the assignment – because if it's not by the assignments I would be a referee – a referent – doing a job – don't be late – you understand my role? I think a good assignment leads to motivation.

**Interviewer**: The role of the student in that case – is to follow the assignment?

**Immo**: No – because an assignment can be a very old assignment – it has to lead to **action** from the student"(Immo, Dutch lecturer, participant IMEET programme)

The lecturer describes his task to be the creation of assignments which motivate students to learn. And the objective of creating motivation is to create action and to develop students will to act on their own.

Overall, it appears that lecturers seek to prepare students for a certain stage of development where they are personally *ready* for an entrepreneurial activity. This final stage in the learning process obviously is connected to autonomous and self-responsible learning behaviour and the ability to think independently. Thus, lecturers understand

their role to lie in the *stimulation* of learning in the sense of *provoking an appreciation of how to learn and what to use to learn*.

### 5.3.3 Contradictory findings on the role understanding of lecturers

Finally, a further quality emerges which lecturers are expected to possess, which is the education of *independent thinking* within their students. However, this quality is not expressed without certain contractions, which is why both perspectives on this quality are outlined in this separate section.

To begin with, students would like lecturers to show them how to see the world in a different way and to be critical with what they do.

"[the lecturer] must stimulate thinking processes (...) stimulate **independent** thinking – of course – he should allow that one can voice one's own opinion – must provide room to do so (...)" (Steffi, German student, SMILE programme, translated from German)

In the quotation above, the development of independent thoughts within learners is pointed out to be a central part of the lecturer's role.

Interestingly, the same student provides a counterexample to the wish for independent reflections by stating that the lecturer's role should be to strongly direct the learning process and to provide students with predefined objectives.

"[The lecturer's task is] a bit to direct and to – actually not only a bit but very much to direct – he should take learning into the right direction – this is why you are in the lecture – because you want to know something and the lecturer must think the right objective (...)" (Steffi, German student, SMILE programme, translated from German)

When it comes to the lecturers' influence on the learning process, those seem to be expected to govern and direct this process and moreover to know 'the right objective' which seems to contradict the previously mentioned wish to be educated towards independent thinking and self-responsible learning processes.

To further investigate this contradiction, the lecturers' point of view is added to the line of thought. As already pointed out under 4.4.2 lecturers would like to enable students to

think independently and to help them uncover their passions and individual objectives. But on the other hand, they are attributed a limited ability for independent thinking as stated by the lecturer of the IMEET programme were entrepreneurship educators and consultants step into the role of the learner again.

"My role is to change their mindset by help of new experience, reflections and conceptualizations – it is thus to be a **facilitator of their interactive learning processes** – I also try to make them **aware** of their limited ability to reflect on own learning practice and to lift reflections to a general level of reflection – but that's one of the difficulties" (Paul, Danish Director, IMEET programme)

Lecturers should be capable of developing independent reflections in the sense of reflecting on the meaning and value of their own learning experiences. Even though the quotation refers to the learners of the IMEET programme, those are addressed in their role as a lecturer which should be to independently reflect on their learning practice. This ability is said to be poorly developed as well as difficult to introduce.

Furthermore, in that context, lecturers are also said to possess a strong goal orientation in their way of thinking and working which limits their ability to be flexible towards change and their ability to develop independent thoughts on alternative ways and goals.

"(...) I find it important that they dare [to have a] lower level of control. They are socialized to be highly goal oriented – it is important to have focus on the process – the learning journey – and not solely on the preset goal - allow goal to change under way" (Paul, Danish director, IMEET programme)

The programme director addresses his expectations towards both lecturers and learners as his students are both at the same time. And both are considered to have been socialized to be highly goal oriented and to work towards and according to predefined goals. He would like those to dependent less on outcomes and the achievement of previously defined results; instead they should be more open towards new developments and eventual changes in the learning process. They should thus detach from goal orientations and develop a certain independence and openness in the way they learn and in the way they transmit this quality to their own learners.

Furthermore, this quotation allows drawing conclusions on the contradictory statement of the student who would like lecturers to provide space for independent thinking while

at the same time governing learning and providing objectives to the education. Even though lecturers *should* be able to think independently and be more open towards change, they may possess a rather limiting goal orientation resulting from the influences of the social environment they grew up in. This may also be true for learners who were exposed to the same system of education. The expectation to be provided with a goal oriented education and the assumption that there is one right objective provided by the lecturer, does not even seem to be consciously realized by the learner as contradiction to the wish to be educated towards independent reflections and is named in the same breath.

We may conclude that a lecturer should possess and educate the ability for independent thinking. Thereby, the challenge is to overcome the prevailing focus on goal orientations which hinders open minded and flexible learning processes. The focus on outcomes rather than learning processes is said to be induced by society and therefore impacts on both lecturers and learners.

The following table summarises all central expectations towards the lecturer's role and provides a comparative analysis of both perspectives.

<b>Comparative analysis of both perspectives on the role of the lecturer</b>			
<i>Conceptualisation</i>	<i>Attributes of the concept</i>	<i>Learners</i>	<i>Lecturers</i>
Connectivity	Connecting to students' learning needs	✓	✓
	Close, personal connection to students	✓	X
	Connect learners to present events and world outside classroom	✓	✓
	professional experience with taught subject	✓	✓
No connectivity	Keep distant relationship	✓	x
Educate responsible learners	Create intrinsic motivation to learn	✓	✓
Educate independent thinking	Initiate independent reflections	✓	✓
Limitation to independent thinking	Dependency on goal orientation	✓	✓

Table 18: Comparative analysis of both perspectives on the role of the lecturer

For students, the role of the lecturer primarily lies in establishing a connection to learners and to the classroom in order to understand learning needs and to enable learning. Hereby, and in difference to the lecturers' statements, students expect lecturers to create a more personal and even 'emotional' connection to learners in the sense of sharing their authentic self, their successes and failures, their passion for the subject and by trying to speak 'the language' of students. Lecturers too, would like to connect to the individual learning needs of each student, but do not indicate the need to disclose their own personality and share their personal experiences with them. However, both agree that the initiation of learning processes through the creation of motivation is a vital part of the lecturer's role. Hereby, the objective of motivating learners is to initiate self-responsible learning processes and thus autonomous learners.

Furthermore, the lecturers do not confirm students' expectation that a lecturer should be a linking element to the world outside the classroom and that he or she should be connected to present events. However, lecturers share the opinion that they should be a kind of role model for learners and should know what they are talking about from real life experiences.

And finally, a lecturer should educate independent thinking within learners, whereby a focus on goal orientations may be an obstacle to initiate open minded and flexible learning processes and seems to present a challenge to overcome by both lecturers and learners.

#### **5.4 Limitations of entrepreneurship education**

The question of limitations to entrepreneurship education is essential to approach the research question as it refers to elements that lecturers and learners perceive to hinder the achievement of the educational goals and thus to aspects eventually hindering entrepreneurial learning processes. This key issue was expected to give insights into

eventual restrictions and limitations to overcome in the scope of entrepreneurship education.

#### 5.4.1 Limitations on individual level

While indeed both sides named several limiting aspects of diverse nature, most students indeed consider entrepreneurship and entrepreneurship education to be unlimited as the following answers exemplify.

"**Selva:** No. Right now I don't see any limitations"(Selva, Cuban 1<sup>st</sup> year student, Kaospilot programme)

"**Petr:** No, not honestly" (Petr, Danish 1<sup>st</sup> year student)

According to these quotes entrepreneurship education seems to have no limitations. And the reason why students may not see any limitations might be because they locate eventual limitations within *themselves*.

"There are only the limitations that you make yourself. If you think you gonna reach the sky – you reach the sky – education is just the foundation – everything is possible" (Thomas, Danish 1<sup>st</sup> year student, Kaospilot programme)

A notion of freedom and the awareness of the open possibilities related to entrepreneurship seem to be at the top of the boundlessness that students attribute to entrepreneurship education.

"(..) you make of it what you want to – you make it how you want to make it and you get out of if what you put in – I mean in terms of getting – if there's something you can't do – well not really – because you're free to do what you want (...) there's nothing you can't do if you really want to do it." (Stephanie, Scottish student, COEUR programme)

The student very much stresses the learners' freedom to think and act independently and without limitations as a characteristic of entrepreneurship education. But at the same time, the quotation points towards another crucial aspect in order to enable this freedom in thought and action, which is the fact that the learner has to take actions in order to make use of this freedom. Furthermore, by locating eventual limitations within

themselves students already assume responsibility for their actions as they clearly are aware of the fact that they are the ones capable of doing and not doing things.

However, these inner limitations may differ from individual to individual according to their personal strengths and weaknesses. Some name a lack of self-discipline as a restriction to entrepreneurial action, others refer to a lack of self-confidence.

"No, I don't see limitations – no other than my own self confidence to do the things I would like to do" (Metti, Danish 1<sup>st</sup> year student, Kaospilot programme)

The reason why this student may not act independently might be his dependence upon external factors such as other peoples' opinions or on fears of failure that influence on the confidence in his actions. A lack of independent ways of thinking and acting may thus be a major factor limiting entrepreneurial actions.

To conclude, one of the major limitations to entrepreneurial learning seems to lie *within learners* themselves and their individual dependencies on personal limitations which prevent them from entrepreneurial activities.

Limitations on Individual Level		
<i>Descriptive summary of students' responses</i>	<i>Primary classification</i>	<i>Further interpretation</i>
There are no limits – you're free to do whatever you want to		
Learners get out what they put in	Limitations lie <b>within learners</b> and their <b>dependence</b> on <b>inner limitations</b> ; Entrepreneurship is about <b>independence</b> and independent choices;	To make use of this independence, learners must <b>take responsibility</b> for their actions. Furthermore, by locating eventual limitations <b>within themselves</b> , learners already demonstrate <b>responsibility</b> for personal limitations
Freedom to find solutions that overcome limitations		
Possibility to change limits		
Limited views of students and mental restrictions		
Lack of self confidence to do what you would like to do		
Lack of self discipline		
Reality – Limiting real life restrictions and responsibilities		

Table 19: Limitations to entrepreneurship on an individual level

#### 5.4.2 Limitations on Programme Level

The table above deals with those limitations that students attribute to themselves and which are located on an individual level. However, further limitations have been located

outside the learner and on the level of the education programme and the education institution delivering this programme.

A major limiting aspect seems to deal with students' relation to what they call 'the real world' and their fear of an insufficient connection to this world outside the classroom.

"I'm sure that there is lot of things that are not totally like it is in the real world – in the school, and I am sure that when I get out and I try this in the real world I will have a lot of learning experiences as well, but I think that it tries to cover the most of it" (Katrine, 1<sup>st</sup> year student, Kaospilot programme)

The student above worries about making insufficient practical experiences in the scope of the education and thus to have an insufficient understanding of the world outside the classroom – which she entitles as "real world" and thereby clearly distinguishes and separates from the world of the education. Hereby, the latter consequently seems to be a sort of "unreal" world to students and different from what happens in reality.

While some are afraid of insufficient practical experiences in the scope of the education, others worry about an insufficient knowledge or theory input to understand structures and processes of the business world.

"There are definitely limitations. Because we only have 3 years and the practice takes longer - that we're just lacking the theory – so, probably because of time issues but also the way the school is build we are missing – or lacking a lot of the **basic** business theory – leadership theory – not just to understand but because the way we do that is just also to have some of the same words and some of the same expressions, because we're coming up there with a **whole** different **dish** than the rest and have to bridge that too – than actually we have one [semester] to end that, on our last semester – bridging the KP–people over to the real world. The fact that we are talking about the KP as KP–world makes it an own world and makes it **so** difficult for some to get out of it." (Sara, 3<sup>rd</sup> year student, Kaospilot programme)

The lack of business knowledge and theory is considered to be an aspect preventing students from successfully connecting to the business world. Moreover, the fact that students seem to speak another language and seem to be raised in a wholly different culture not only separates them from the business world but also hinders the entry into this world and moreover the exit from their own educational world. Paradoxically, the context of education seems to be able to *create a dependency* on its own world and thereby limits students' capability to relate to the world outside the classroom, while at



the same time it is trying to *foster students' independence* to take own actions and connect to the world outside the classroom. The practical experiences during the last out of three semesters are described as a crucial and difficult moment when the established culture of the education must be brought together with the real world and students are challenged to relate their learned competences to the needs of the business world.

Furthermore, another paradoxical aspect lies in the fact that the longer the programme duration is the deeper students seem to grow into the educational culture and its language which limits their capability to 'detach' from it later on and almost creates a growing dependency on the programme itself while at the same time a lack of time and the short duration of the programme is identified as a limiting factor. Thus, eventual limitations seem to lie in both, short and long term programmes.

All of the above developed aspects on limitations related to the education refer to a strong desire of students to fully understand and relate to the "real world" – the world outside the classroom and express their wish to be capable to independently act in this world. Even though for some students this independence and capability to connect to the outside world does not seem to be achieved at the moment of the interview, it still seems to be a desired quality they are thriving for. The table below summarizes the limitations students attribute to the education.

Limitations on Programme Level		
<i>Descriptive summary of responses</i>	<i>Primary classification</i>	<i>Further interpretation</i>
Time limit of education		
Insufficient preparation for business world / practice in life has to be made outside classroom	Fear of <b>limited connection</b> to reality and the world outside the classroom - <b>Desire</b> to <b>connect</b> to real life/business life	Challenge to <b>detach</b> from education and act <b>independently</b>
Limited connection to reality: danger of education community that isn't able to connect to outside world (link curriculum to society)		
Insufficient knowledge and theory input to understand the (business world)		

**Table 20: Limitations on programme level**

### 5.4.3 Limitations on Discipline Level

Further limiting aspects were identified in the nature of the discipline of entrepreneurship. Students consider entrepreneurship to be a very broad subject field with lots of different elements which means there always is something to learn and to discover.

"(...) Entrepreneurship is really broad – there are so many different angles you can look at, you can't really say what there's a limit to what you can learn in Entrepreneurship" (/02/Scottish student, COEUR programme)

The discipline of entrepreneurship is felt to be highly open and broad in its nature, leaving a lot of space for diverse learning experiences and comprising various subject fields. At the same time, this openness might be seen as a lack of specification as somehow entrepreneurship education prepares for a self employment in any area but on the other hand it completely lacks technical and theoretical education on all of the eventual professions. The student below pronounces the difficulty related to the openness of the education and the uncertainty graduates will have to cope with as the education does not prepare for a specific job profile.

"Yes there's probably some limits (...) For example – it's not a standard education. So, you're not guaranteed to get a job after you graduate because a lot of people actually don't know what it is. So, that could be a limitation that like people don't know what you've been studying. So, you couldn't get a job easily. But **that's** what they train us to – like to have your own company, **how** to get a job and **how** to be – you know have a core benefit for company and change all that (...)" (/04/ Danish 1<sup>st</sup> year student, Kaospilot programme)

Finding a satisfying profession after their education will thus very much depend on the extent to which students succeed in *taking responsibility* for what they would like to do and to create a connection to their desired field of profession on their own. To do so, they will have to relate to people and demonstrate the added value they may create based on their education. This is a highly self-responsible act as due to the lack of an official profile – only they are truly aware of their value adding qualities. Entrepreneurship education therefore entails the necessity to *successfully connect* to other people or future employers. Depending on individual preferences, the openness of the education is felt to be either an opportunity opening up many professional options

and enabling a flexible pursuit of individual aspirations as well as it presents a potential limitation to a direct job entry into any specific professional area.

"(...) I see that [the undefined job profile] sometimes as a limitation because it's not a standard education. At the same time it's a strength – yeah" (/o4/ Danish 1<sup>st</sup> year student, Kaospilot programme)

The nature of the discipline entrepreneurship seems to be a double edged sword bearing limitations and opportunities at the same time in the fact that the later job profile of its graduates is loose and undefined. Students are well aware of these two sides of the education. However, those students thriving for a greatest possible independence in their professional choices seem to regards this openness primarily as strength and the wish for independent behaviour seems to be a quality which is strongly connected to the profile of learners interested in an entrepreneurship education. The table below captures this train of thoughts on the limitations related to the discipline of entrepreneurship.

Limitations on Discipline Level		
<i>Descriptive summary of responses</i>	<i>Primary classification</i>	<i>Conceptualisation</i>
Open job possibilities of entrepreneurship – can be opportunity and limitation	Unlimited discipline of entrepreneurship enables <b>independent</b> choice of profession	Limitation lie in fear of <b>independent thinking</b> and <b>acting</b>
Limitations difficult to locate as discipline is very broad		

**Table 21: 1 Limitations on discipline level**

The open character of the discipline is named as a limitation and opportunity at the same time. Whether it is perceived to be the one or the other very much depends on the individual prerequisites of the learner who may or may not be at ease with the unlimited choices of the education and the required independence to self responsibly chose and relate to a later profession.

#### 5.4.4 Limitations from the Lecturers' Perspective

In contrast to the learners' perspective, which did not locate any limitations on the lecturers' side, most of the lecturers' responses attribute limitations to the educator – and thus to their own profession.

"Education can kill entrepreneurial spirits by educating in the wrong way. Lecturers have got a great power to slam the brakes on enterprising behaviour – if they want to" (Marianne, Dutch lecturer, participant IMEET programme)

The reasons why lecturers are attributed the power to hinder entrepreneurial learning are reasoned in different ways. One of these reasons seems to be located in the educators' personal background, which may be too traditional and narrow minded to foster entrepreneurial learning within others:

"A lot of consultants are thinking 'in the box', because it's much easier to handle, if you are going to work inside the frames. The background of the educators and consultants limits their possibilities" (Emil, Danish Lecturer, participant IMEET programme)

A limitation seems to lie in some lecturers' dependence on frames and guidelines and the way that they limit their thinking according to these frames. The quote points towards the necessity to be able to think in new ways and go further in order to educate entrepreneurial learning. These limited ways of thinking may be anchored in traditional pedagogies that educators apply and that have not been adapted to nowadays needs. Different ways of thinking are considered to lead to different pedagogical approaches and may help to overcome traditional approaches limiting entrepreneurial learning.

**Paul:** To be precise, I think [the limitations lie in] the pedagogical approaches – so long, we have such a long tradition for **these** ways of teaching, it has come to a limit. They have to –

**Interviewer:** 'These' ways are the classical ways of teaching?

**Paul:** The classical way of lecture, the classical way of engaging students. We have to do it in other ways – for instance engage them during study times **in** the business community, **in** the cultural community or in the NGO community – doesn't need to be business – to **engage** them much more during studies – We have an old-fashioned idea that you go to primary school, secondary school and university and **then** you go out in the community but we need to have a

community **much more** in during the study time" (Paul, Danish lecturer, participant IMEET programme)

As a highly limiting factor related to the pedagogical approach, the quotation identifies an insufficient connection of the classroom to the world outside the classroom in order to abolish the strong separation of both and to help preparing students for their professional life during education not only after it. Creating a social connection to the community is considered to be a basic prerequisite of succeeding businesses and education should stimulate and foster this capability to connect throughout the entire education.

Another limiting factor refers to the opposite argument of forcing a real life entrepreneurial experience even if it is not appropriate and likely to end in a failing business.

"Education should not push into business creation but should create awareness of individual ability and motivation to pursue an entrepreneurial activity" (Stefan, German lecturer, SMILE Programme / translated from German)

The idea that entrepreneurship education has to lead to business creation does not support the individual awareness of entrepreneurial aspirations and therefore hinders essential introspection processes. Hereby, entrepreneurship education is not considered to be about knowledge or techniques to start a business but about expanding the self – it should open up ideas about the individual capabilities of the learner. An education which does not allow and support the exploration of inner needs and objectives therefore limits those entrepreneurial learning processes. Some of the reasons for that can be found in the lecturers.

"**Anja**: (...) limitations are what I am going to write in my certificate project, is that often the teachers are very narrow minded and only focus on their specific area – I don't know if it's called proudness – academic proudness – I just made a big report, a quantitative report on what teachers **believe** would be the right methodology for teaching entrepreneurship and what they actually **do**, and what they believe is stimulating the students to become more entrepreneurial and there's a **huge gap** between what they **believe** in and also what they want to, because they **see** themselves as entrepreneurial teachers (...) So, there's a gap between what they would **like** to do, what they **believe** in and what they **actually** do" (Anja – Danish lecturer, participant IMEET programme – bold words emphasized by interviewee)

The interviewee above accuses a lack of open mindedness of some lecturers to create discrepancies between their motivations, their attitudes and their actual behaviour. Their motivations seem to be coined by what is expected from them as 'entrepreneurial' teachers but their actions and thus their way of teaching seems to be very different from their motivation and described to be limited by their narrow minded attitudes.

We may conclude that in order to actually educate entrepreneurial ways of thinking and working, lecturers should have a certain understanding of these ways themselves as a prerequisite to support the development of these qualities within the learner. Otherwise their will to stimulate entrepreneurial learning within students may contradict with a lacking awareness of students' learning needs.

<b>Limitations on Lecturers / Educators Level</b>		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Further interpretation</i>
Gap between what teachers would like to do, what they believe in and what they actually do	<b>Contradiction</b> in motivation, attitude and behaviour	
Danger of pushing into business creation	Hindering exploration of entrepreneurial aspirations ( <b>inner connection</b> )	<b>Limited ability to understand learners' needs</b> in order to enable entrepreneurial learning
Old fashioned pedagogical approaches, no link to society	Hindering <b>connection</b> to business society	
Personal background as obstacle	Lack of <b>independent thinking</b> to enable entrepreneurial learning	
Lack of open mindedness		

**Table 22: Limitations located by lecturers on lecturers' level**

The limitations which most lecturers made out amongst their colleagues are generally related to the capability of thinking and acting independently from their personal background, the traditional pedagogies they have been confronted with, or the frequently existing pressure to generate enterprise creations. By locating eventual sources of limitations within their own profession, the lecturers demonstrate a feeling of responsibility for the education.

Furthermore, their responses are generally very much in line with those of the students. Regardless of the influence of the educator or the pedagogical frame, they generally consider entrepreneurship to be a discipline without limitations.

"(...) If you succeed as a learner of Entrepreneurship you could change the world. I mean you could change a part of your world or you could change the world (...) I see no limitations – the heaven is the limits" (Magrete, Danish lecturer, participant IMEET programme)

As for the lecturers the discipline of entrepreneurship does not seem to bare limitations to its learners, those are also considered to be the ones responsible for limiting their entrepreneurial behaviour.

"Limitations lay in people – students themselves, I think – they limit themselves" (Aafke, Dutch Lecturer, participant IMEET programme)

Just as the learners are aware of the responsibility for their entrepreneurial activities, the lecturers equally attribute this responsibility to them.

Furthermore, the lecturers locate the sources of students' inner limitations which hinder entrepreneurial learning processes in their motivation and their will to finally act entrepreneurially.

**Hilda:** "To enable ideal learning processes, students must have certain abilities. I think that at a certain stage you must select students – by saying, 'to what point do you possess certain qualities? Do you want to become an entrepreneur?' And if they want, then it's working. And the limitation – it's the will of the students"

**Interviewer:** "But the education itself?"

**Hilda:** "Has no limitations" (Hilda, Dutch Lecturer, participant IMEET programme – translated from German).

According to the lecturers, learners must possess intrinsic motivation to finally act in an entrepreneurial way. Otherwise their way of thinking which may eventually be entrepreneurial will never impact on their actual behaviour as they will not have the will to take action.

Limitations on Learners' Level		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Further interpretation</i>
Lacking awareness of freedom to do whatever students would like to do	Being aware of <b>independence</b> in thought, behaviour and choices; limitations through <b>dependence on inner restrictions</b>	Learners must <b>take responsibility</b> for their actions to overcome limitations and bring independent thinking into action.
Lacking awareness of ability to overcome limitations		
Lack of intrinsic motivation		

**Table 23: Limitations located by lecturers on learners' level**

Finally, the lecturers also see limitations within the education programme or the respective institution. One of these limitations is linked to creation of valuable assignments that enable entrepreneurial learning.

"The limitations are – (...) it's hard to find – **real life** assignments – I think what we talked about today when you talk about **passion** you have to have **real** assignments and not cases who are written down and they are already fixed (...) Most of the time as a teacher you play the role of a customer and you have some role play – but **really** learning is with **real companies**" (Immo, Dutch lecturer, participant IMEET programme)

Entrepreneurial learning is described to be real life learning which is enabled through assignments that allow a connection to the world outside the classroom. Only real life experiences are considered to create passion for the subject and thus an intrinsic motivation to act. A limitation to the realization of real company assignments is located in the time consuming nature of the assignment and the often very limited resources of the education to allow lecturers the development and realization of these assignment.

"(...) I think in my school, we have **so** many chances to make this [real company assignments] happen but we don't take them. But it's also a limitation because it costs a **lot of time** to, for each new programme, to look for new companies; new persons within a company who would like to work with you together. You have all kinds of trouble with the assessments" (Immo, Dutch lecturer, participant IMEET programme)

Limited Resources such as time seem to play an important role in enabling an education that fosters entrepreneurial learning. The required assignments need a lot of time to be prepared, accompanied and assessed at every time and as those ways of educating are not routine processes and highly untraditional, they seem to additionally create many difficulties for the lecturers. An institutional framework which does not support the



creation and realization of such an education can negatively impact on the motivation and the possibility of its lecturers to enable entrepreneurial learning.

Limitations on Structural Level		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Further interpretation</i>
Limiting organization / administration / curriculum	Institutions hindering <b>independent</b> development of ideas and individuals	Institution creates the <b>framework</b> that supports and enables
Limited prepare for business world / no link to business community	Lack of <b>connection</b> to business world	entrepreneurial learning – potential to <b>hinder learning processes</b>
Lack of resources / time consuming preparation of good assignments	<b>Limited resources</b>	

**Table 24: Limitations located by lecturers on programme level**

To conclude, both students and lecturers generally consider the discipline of entrepreneurship to be without limitations and full of open possibilities. The most obvious entrepreneurial limitation that students can see seems to lie within them and they clearly take the responsibility for all that they may or may not accomplish. The lecturers share this point of view but also attribute parts of the responsibility to themselves as only a lecturer with a certain understanding of students' learning needs is considered to enable entrepreneurial learning and some lecturers seem to lack this ability.

Furthermore, both, students and lecturers can see some structural limitations linked to the education, such as the lack of a career structure constituted in the very openness and boundlessness of entrepreneurship. The open structure of the discipline demands self-responsible behaviour and an autonomous taking of initiatives by the student, which at the same time requires independent reflections to explore job opportunities and generate own ideas and new solutions to eventual limitations. A lacking capacity to deal with the independent choices of the education and to take responsibility for ones actions can therefore present a considerable limitation to students. Moreover, entrepreneurial learning is considered to be learning through real life experiences and all aspects hindering a connection of the teaching to the world outside the classroom present an important limitation to entrepreneurial learning. And finally, in contrast to the learners' perspective, the lecturers do not see limitations in the discipline of entrepreneurship.

None of them mentions the open possibilities of the education to be a limitation, while it is considered to be a limit by those students being less at ease with the high level of responsibility and independence that the education entails for its graduates.

<b>Limitations to Entrepreneurial Learning</b>			
<i>Conceptualisation</i>	<i>Limiting aspects</i>	<i>Learner</i>	<i>Lecturer</i>
<b>No limitations</b> to entrepreneurship	Discipline of entrepreneurship is boundless	✓	✓
	Boundlessness as eventual limitation	✓	x
Demonstration of <b>self-responsibility</b>	Limitations lie within learner	✓	✓
	Limitations lie within lecturer	x	✓
	Responsible behaviour to deal with openness of education	✓	✓
<b>Independent reflections</b> and working processes	Lack of independent thinking to overcome limitations	✓	✓
	Lack of independent thinking to create/explore job opportunities	✓	✓
Enabling <b>connection</b> to world outside classroom	Limited real life experiences	✓	✓

**Table 25: Limitations to entrepreneurial learning – from lecturers and learners perspective**

## 5.5 Assessment of learning outcomes

The question on how learning outcomes should best be assessed seeks to understand how entrepreneurship students would like to demonstrate their learning and is meant to explore their constructions on how they believe their learning outcome can best be understood by others. At the same time, the interest is to see, whether students' preferences on assessment are understood and considered by the lecturers or whether their ideas on how learning outcomes can best be explored are completely different. The answers provided referred to different aspects of the assessment process and were structured as follows: a) The **task or assignment** to assess, b) the **assessment method** used to assess the assignment, and c) the **criteria** according to which the performance is assessed. In the following, the presentation of the findings is split into these three aspects.

### 5-5.1 The Assessment Method

Many of the responses to the question 'how learning outcomes should be assessed' referred to the methods which are used to investigate learning outcomes.

Hereby, a general tendency towards assessment methods that allow for social interaction becomes apparent as those allow for both independent reflections and oral exchange and can go beyond pure knowledge testing.

"What I always preferred most in university and in school were oral examinations – because the lecturer is able to react on the learner. He can check and ask what was learned from the seminar or the teaching. In my opinion, pure testing of knowledge makes no sense, because, if I've got an examination in history, I can read all information in books and lexicons – but do I now understand why two folks are fighting and how I may solve this conflict, or what I have learned for myself from that, how I can deal with conflicts? I think this is much more important than to say 'ok, the 30 Years' War was from 16 hundred something till then and then – so, a reaction that entices a learner to – think for himself – and that I think is better in oral examinations than it is in written ones – yes, definitely" (Diana, German student, SMILE Programme, translated from German)

The student values oral over written examinations as those enable an exchange between student and lecturers and thus allow the lecturer to explore the students' understanding of the subject field in a more profound and comprehensive way by leaving space for critical and independent reflections on the topic. The ability to demonstrate independent reflections is considered to uncover learning processes and presents a major reason why written examinations and the pure testing of factual knowledge are not appreciated.

However, not all students seem to naturally strive for this social exchange and the demonstration of independent thinking. Some seem to prefer less interactive and profound ways of assessment and are less at ease with communicative methods requiring independent reflections.

"I would not like to have a presentation at the end but everyone gets a case study and has three hours to solve a problem (...) and we would work under time pressure (...) but not such a presentation that is prepared over 2-3days (...), while we could have used the time much better (...) time is scarce and we could have been given much more input instead" (Alex, German student, COEUR programme, translated from German).

The argumentation of the student above seems to contradict the reasons why other students prefer assignments related to social interaction and the possibility to co-develop and construct knowledge based on reflections on the subject. This student prefers methods related to predefined assignments including clearly defined questions and tasks. Furthermore, he prefers to work under time pressure and without social exchange during the assessment or its preparation.

A similar contrast in responses is to be found in student's estimation of the use of grades. Hereby, a strong link between students' preference for oral or written exams becomes apparent. Those students preferring written assignments do also appreciate the use of grades.

"I like to have written exams and get graded" (Olafur, Icelandic 1<sup>st</sup> year student, Kaospilot programme)

On the other hand, the students who prefer oral and interactive assessment methods, do not value grades as they do not consider them to capture the complex learning outcomes of each individual.

"(...) I've been in both kinds of school systems, one without exams and one with and I can see great trouble in the rating with numbers – because they're not very accurate and they don't cover the whole spectrum of learning (...)" (Penilla, Danish 1<sup>st</sup> year student, Kaospilot programme)

The connection between the preferences for interactive or socially isolated assessment methods and the use of grades or alternative solutions may be related to the parallels in the complexity of the assessment method and the according instrument to translate the assessment into something that can express the result accordingly. Students preferring exams consider grades to be appropriate. While those who would like to create a comprehensive picture of the complex learning process, judge the use of grades as insufficient to mirror their learning outcomes. Thus, a distinction becomes apparent between those students who learn for an outside approval of their abilities and those who learn for the self and their personal development. Again the notion of different levels of personal development and states of personal maturity arise.

The large majority of learners strongly emphasise that the most essential aspect that assessment should captivate is their individual learning progress rather than the extent

to which they reproduce knowledge. Indeed, students do not seem to have rigid and exactly defined ideas of what assessment would have to look like, only the underlying wish to truly investigate their *learning progress*.

"I think it needs to be something about what have I learned, if it's gonna be writing or something, it's not necessarily if we do a presentation that it shows what we actually learned. I am not a big emphasize of exams but something that really can show what you learned, what you were doing (...)" (Jan, Swedish student, COEUR programme)

Besides the many possible ways methods to assess students, what really seems to be important to them is to demonstrate their actual *learning* and the *learning progress* they made in the scope of the education.

Moreover, as part of this learning process, students would like to have their learning progress to be mirrored back by others in the scope of the assessment.

"We have a lot of different assignments we have to solve. And then we have to present it. And after presenting it we always have a lot of evaluation on what we done and how we could do better. And it's very good to have this talk about it instead of grading ourselves – instead of saying you get a number for your assignments. And especially when we work with real life clients, we get real life critique, so you get from the team leaders and you get from the clients as well" (Michel, 1<sup>st</sup> year student, Kaospilot programme)

Feedback seems to have a much higher value for learners as it helps them to understand the points to improve, their strengths to build on and helps them to progress. It thus seems to present a learning process in itself.

Most of the students clearly prefer assessment methods based on communication and social exchange whether with lecturers, peers or further externals involved in the assignment. These methods are considered to give insight into individual learning processes and are valued because of their potential to allow introspection and to provide a learning experience in itself. At the same time the preference for these interactive processes is accompanied by a devaluation of grades as an insufficient instrument to capture the whole spectrum of individual learning outcomes. Learners explicitly refuse methods hindering social exchange and focusing on outcomes instead of the learning process. In contrast to this wish for social connection and independent reflections, very few students prefer written examinations and the use of grades to measure the results of

these examinations. Thereby, little wish to demonstrate social or self-responsibility for the learning or to personally develop and grow through the assessment is demonstrated.

Assessment Methods		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Conceptualisation</i>
Seeking feedback to reflect learning progress	<b>Social interaction to demonstrate learning and learn through assessment</b>	Assessment as <b>learning process</b> in itself!
Interactive assessment methods		
Conversation on personal level		
Feedback / constructive critique	<b>Introspection - creating inner connection to learning needs and progress to constantly enable individual development</b>	Assessment of students <b>learning</b> not their knowledge
Reflection on learning (introspection)		
Auto-evaluation		
Controlling and defining individual objectives		
No written exams – don't display individual learning of individual	No methods incapable to investigate <b>individual learning processes</b>	Assessment of capability of <b>independent thinking</b> and reflection
No grades – don't cover complex individual learning processes on personal and professional level		
Submission of written report	<b>No wish</b> for social <b>interaction</b> to assess learning outcome	Preference to measure learning outcomes in social <b>'isolation'</b>
Written exams		
No oral communication to assess learning		
Wish to be graded	<b>Traditional measurement</b> of success	<b>Dependence</b> on traditional assessment criteria
Working under time pressure during assessment		

**Table 26: Learners' Preferences for Assessment Methods**

### 5.5.2 Assessment Criteria

Most of students' answers refer to the *criteria* according to which their learning outcomes should be evaluated. Assessment criteria define what is expected from the learner and therefore may impact on students' learning. Regarding the criteria according to which students would like to be assessed, a strong tendency to demonstrate certain *personal qualities* rather than knowledge or know how becomes apparent.

Starting with the general focus of the assessment – learners do not seem to want it to focus on the learning outcomes but would prefer it to concentrate on the learning process they went through in order to get to the final result.

"It's the process that matters, not what you got – because this is where I think of this place - where I am supposed to fail in doing projects and things like that and because just learning. Of course I am looking for success. But it's not about how **well** did you go with the projects. It should be like, it should be how well did you **do** to – and **plan** and **work**, not the outcome of the actual project. We should be able to demonstrate what we learned at some point at the end of each year or each semester, but **not** in a grading system where it's all based on how well did you do in the world" (04/Danish 1<sup>st</sup> year student, Kaospilot programme).

Learning is not considered to be an end product but a constant process of understanding and gaining insights. Students would like to be assessed based on their development and the progress they made rather than on what is officially regarded as successful outcome. Thereby, the student above addresses a further important aspect. Usually, assessment focuses on the success of the learner according to official success criteria. But as the student points out, success is not the objective of entrepreneurship education. On the contrary – students should be allowed to fail and make mistakes as part of this learning process. Students hereby clearly dissociate from any adherence to official success factors and put emphasis on their personal learning.

Furthermore, learners would like to be assessed on their capacity to generate own ideas and solutions to problems and not just their ability to follow instructions.

"(...) I think it's better, let students get not like this is kind of "right or wrong answer" but think creatively that there is not one good reason - as well examination should see how well is the student able to think for himself and understanding 'this is the problem what should we do' not say 'you have to do this, this and this'(...)" (Jan, Swedish Student, COEUR programme).

The wish to create new solutions and have own ideas, seems to be closely connected to their wish to think independently and make own reflections in the scope of the assessment. Independent thinking is suggested to be an essential part of the assessment criteria.

Others do not see any use at all in measuring learning outcomes as they feel learning to be something they solely do for themselves and the quality or level of their learning outcomes only needs to be judged by themselves and not by others.

Interviewer: "How would you want your learning outcomes to be assessed?"

Student: "Growth and development."

Interviewer: "But how could they [team leaders] assess this?"

Student: "I think it's a hard thing to measure actually because it depends on if I at the end of the year feel that I am totally satisfied with my outcome.(...) I am not looking for any (...)grades. It's not that important for me to show the team leaders, it's more that it's important for **myself** to know that I actually grow and develop (...)" (/07/Danish 1<sup>st</sup> year student, Kaospilot programme, bold typed words were emphasized by interviewee)

Hereby, the assessment turns into an auto-evaluation on the basis of personal development and growth of the learner. Students thereby attribute the responsibility for their learning progress only to themselves.

However, in contradiction to these criteria, one student named the size of an enterprise and the amount of profit generated with it as criteria to assess the learning outcome in order to see how well the learner applied what was taught to him.

"I think the best way to show someone what you have learned is if you have later a great business with much profit – But in a short time – it's hard" (Karl, German student, Coeur programme)

The student relates entrepreneurship to having a large enterprise and to making profit and therefore considers the ability to generate profit as appropriate assessment criteria. In contrast to previous attitudes, this learner seems to be influenced by officially recognised success factors such as size and profit of an enterprise.

Assessment Criteria I		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Conceptualisation</i>
Individual satisfaction with outcome / learning for oneself, not for others	Taking responsibility for own learning / independence from others opinions on learning outcomes	
Independent/autonomous thinking "how well is the student able to think for himself"	Wish to be assessed on capacity for independent thinking	<b>Independent thinking and working</b> processes as assessment criteria
Creative thinking & working / creative problem solving	Capacity to generate new ideas and find new solutions	
Focus on learning process rather than end result	<b>No dependence on end results</b> , interest lies in working and learning processes	
Space for failure / learning from failure	<b>No dependence on success</b> - failure as a means to learn	
Measure (potentially) generated profit (at later point)	Assessment of official success factors to measure learning outcome	<b>Dependence</b> on official success factors such as profit

Table 27: Assessment criteria I



Students demonstrate a high level of responsibility by stating that they learn for themselves and not for those assessing them. They do not seek to live up to anybody's expectations except their own and thereby demonstrate a certain independence from external attitudes and objectives. In accordance with this, they want the assessment of their learning outcomes to focus on their individual learning processes where they can demonstrate independent reflections and personally profit from the assessment as it helps them to grow and develop. A notion of independence from other people's attitudes and expectations as well as a wish to think and work independently becomes apparent. Primarily, students would like to be *personally* satisfied with their learning outcome. Regarding the counterexample of the student suggesting external success criteria for assessment, this might refer to a different state of personal development where autonomous and self-responsibility is strongly developed but criteria for achievement are taken from the outside world.

However, for most learners, learning seems to be a very personal act, related to personal development process and consequently is oriented towards personal interests and the pursuit of individual objectives. Assessment thereby becomes part of this enduring learning process.

"Actually I would prefer to look at the outcome and see if I succeeded to apply what I learned (...) in the case of this education it would be the foundation of my little band and according to that objective I would say 'Ok, I realised it within five years, that's a B – I realised it in 10 years, that's a D and if I don't do it at all, that's a fail'.

Interviewer: Does the lecturer define this objective?

Diana: No, I would define it because the lecturer can't say "I give you a task which is to build up a kebab restaurant" and then I have a kebab restaurant and I really don't want to do that. That might be great for some people, but not for me. So, you can't define objectives like that (...)"  
(Diana, German student, SMILE programme, translated from German)

Learning seems to be related to individual interests which becomes all the more apparent in the context of entrepreneurship education where individuals have different entrepreneurial aspirations and need to be assessed according to the achievement of their individual interests. These individual objectives must be chosen by the learner and should furthermore be based on the learners' personal values and his or her authentic personality.

Another essential assessment criterion refers to the extent to which students become active and actually apply their learning outside the classroom in real life situations or projects.

"I actually very much enjoy the way we do this, because we have a practical project we engage in, and that is real world - I have a friend that applied for a position in an R&H department to develop a leadership programme for public leaders – and **that** part I really like because then I can actually see myself how real world should be – because I also just imagine some kind of project that doesn't matter – but the fact that you can go within 3 months, dig deep, learn a lot but also try out how does my theory actually work in real life" (Sara, 3<sup>rd</sup> year student, Kaospilot programme, bold words emphasized by student).

Entrepreneurship very much is related to "doing" and acting in the real world. Students' capability to use and apply their learning outcomes in the world outside the classroom through actual behaviour should therefore be a major assessment criterion. In addition to the wish to connect their learning outcomes to the world outside the classroom, students also wish to demonstrate the connection they created to their inner needs and entrepreneurial aspirations by being assessed on individually chosen projects that mirror their interests and personal qualities (Table 4.1.3.2).

Assessment Criteria II		
Descriptive account of responses	Primary classification	Conceptualisation
Personal growth and development	Independence from official learning objectives / Creating inner connection and satisfy learning needs	Assessing <b>capability to connect</b>
Demonstrate realisation of individual objectives	Seeking a connection to individual objectives	- learning outcomes to the <b>world outside</b> the classroom
Application of what was learned (now or in later life)	Connecting learning outcomes to the world through <b>action</b>	- to <b>inner learning needs</b> and achieve personal growth
Actions / Doing something (entrepreneurship is about doing)		
Creating a big picture' / Apply all learning elements in meaningful way in real life		

**Table 28: Assessment criteria II**

Moreover, in the scope of the assessment, students express a strong wish to demonstrate *responsible* behaviour through their activities.

"(...) I would just like to be a more responsible person (...) I am not looking for any grades (...)"  
(/07/Danish 1<sup>st</sup> year student, Kaospilot programme)

Behaving in a responsible way for the sake of being a responsible person seems to be of much higher importance than being graded for this behaviour. The wish to take responsibility for one's actions is accompanied by the wish to take responsibility for others through the creation of projects that entail a *social* benefit.

"I think it's really hard to measure the final project because a lot of them is still going on. Like, they do a project and they're still running. So, I think it will be hard to measure in the long run, but I think if you should measure it would be like 'how many people benefited from it (...)'" (6, Danish 1<sup>st</sup> year student, Kaospilot programme)

Students would like to show social responsibility through their entrepreneurial action and would like the extent to which other people benefit from their project to be a criterion for assessment.

And as the projects are developed to create social benefit, they are also meant to last and their duration and sustainability therefore is a crucial factor which also complicates the assessment of the project that generally has no official end point.

Interviewee: "I would like to make my final project something that would be sustainable into the future (...)"

Interviewer: "How could they find out at the end of your project what you have learned?"

Interviewee: "Well, the things we do here kind of speak for themselves, don't they? Because it's in the real world! (...) Most of the times we don't need evaluations because the things we do – they're out there (...)" (/05/ Danish 1<sup>st</sup> year student, Kaospilot programme).

The ability to create projects which are valuable for other people and over time seems to be essential criteria to assess learning outcomes. Furthermore, students don't see the difficulty that is related to the assessment of long-term projects, as they do not see the need to be assessed according to common criteria. For them, the fact that they create something in the world outside the classroom seems to be a learning outcome in itself.

Further suggested assessment criteria refer to students' contribution *during* the education and the way they add value to the teaching by asking critical questions, integrating own ideas and giving a valuable direction to the teaching.

"Also the contribution during class should be very important – I think if someone shows strong commitment already during lessons and contributes valuable things, asks questions, useful questions, and thinks critically and just simply plays a part, I think that should be considered – not only stolid learning by heart and writing exams (...) what you change and contribute to the subject should be valued much stronger" (Austrian student, COEUR programme, translated from German).

The extent to which students take responsibility for their learning and the learning of the class is suggested to be part of the assessment. Thereby, the assessment process is suggested to be stretched over the entire duration of the education.

ASSESSMENT CRITERIA III		
<i>Descriptive account of responses</i>	<i>Primary classification</i>	<i>Conceptualisation</i>
Demonstrate responsibility in ones actions	Assessing responsible behaviour	Assessing the extent to which student <b>take responsibility</b> for <b>themselves</b> and for <b>others</b> through their behaviour
Creation of a sustainable project	Wish to behave in a socially responsible way	
Creating a project of social benefit	Assessing responsibility to create valuable teaching	
Contribution/adding value during classes (critical questions, participation and co-creation of learning)		

**Table 29: Assessment Criteria III**

### 5.5.3 The lecturers' perspective on Assessment

Lecturers usually are responsible for design and realization of the assessment. The research was meant to give insight into the ways those consider to be appropriate to investigate students learning outcomes and thus to how entrepreneurial learning may be accessed.

#### 5.5.3.1 Assessment Methods

Generally, the lecturers' preferences for assessment methods are very much in line with those of the students. Just as the students, the lecturers emphasize the importance of integrating further perspectives into the assessment process especially of those experts and professionals who have been involved in student's projects as they contribute a further valuable perspective on their learning progress.

"Because my teaching is practice oriented, I always evaluate together with the enterprises for which students have done assignments. Most often that is a presentation in front of an audience. All those who would like to can go there to see what the students accomplished" (Hilda, Dutch lecturer, participant IMEET programme, translated from German).

As entrepreneurship education should be practical, the most valuable feedback is supposed to be given by the enterprises the students worked with and who observed their progress at close range. For that purpose, and again in line with students' ideas, the lecturers generally don't value written examinations and seem to prefer oral and thus interactive methods to really investigate students' *learning* and their individual achievement instead of making them reproduce knowledge.

"First of all, I think that written examinations should generally be eliminated, as a test more or less implies that I have to repeat something that I heard from someone else, and that I am expected to mirror this opinion – (...) – It would be much more useful to assess based on concrete projects, to measure according to specific tasks and the way those have been accomplished (...)" (Stefan, German lecturer, SMILE programme, translated from German)

Lecturers would like to assess learners according to their entrepreneurial actions and the progress they made. Thereby, autonomous thinking and acting may primarily be investigated through oral methods instead of written examinations.

Furthermore, and again in line with the student view, feedback processes that offer students a possibility to reflect on their learning in order to progress are also judged to be an essential part of the assessment process.

(...) you have to get some feedback in one way or another telling you that this is what you did right, this is what you did wrong (...) And I think to measure that all students are at a minimum level you should put up tasks where they try out for example their leadership and just observe them in their situation and tell them, give them feedback 'yea, you are at a minimum level, you did well in this and that, you have to work on this and that to improve (...)" (Tom, Danish lecturer, Kaospilot programme)

The lecturers consider the assessment to be a possibility to reflect on individual learning and to enable introspection processes of each learner which is considered to be a learning process in itself. Furthermore, and in line with students' priorities, assessment should not focus on factual knowledge but on the individual development and see whether the learner has changed and developed.

"That's so difficult – you can ask people 'changed your habits – have you changed in some kind' you can **ask** people and you can ask the **other** participants 'did you see any change in his abilities for **acting**. You can ask them to witness the others learning. And you can ask one year later – 'what have you done since that'. But it's very difficult. I don't believe in any kind of observations. It's very difficult" (Magrete, Danish lecturer, participant IMEET programme)

Personal development and learning progress are considered to be an essential criterion for the assessment, but seems to be very hard to investigate, as change happens over time and time usually is limited in an education.

Considering all these aspects, the lecturers just as the students generally favour assessment methods allowing intense exchange with those assessing to create a most appropriate picture of the students' learning outcomes. Written methods are not generally excluded but should only take a complementary role. Furthermore, the assessment process seems to present an additional learning opportunity and is expected to focus on the individual development of the learners and to allow those to understand and connect to their inner learning progress.

Regarding the use of grades, the lecturers agree with students on the fact that those are insufficient to capture the learning outcome.

"(...) No, I'm not that fond of grades - because it's just a figure - it doesn't tell you anything about how good you are at cooperating and looking for new opportunities and also coming back to Gardner's 7 intelligences, a grade is normally related to the logic or maybe the language but then you still have 5 intelligences left, some of them being the capability of networking and interpersonal relations which is often much more important when you have to start business (...)" (Henrik, Danish Lecturer, participant IMEET programme).

Grades are not sufficient to evaluate especially interpersonal and social qualities that entrepreneurial activities require. Entrepreneurship seems to be about the ability to socially connect to others and to assess this quality grades are considered to be insufficient.

Preferences for Assessment Methods			
	<i>Methods</i>	<i>Learner</i>	<i>Lecturer</i>
Social and inner connection	Methods enabling social exchange	✓	✓
	Methods enabling connection to inner learning needs and progresses	✓	✓
Social isolation	Exclusive use of written examination without any social exchange during exam	✓	X
Independent reflections and working processes	Interactive methods enabling independent reflections on learning	✓	✓
	No predefined outcomes / open assessment methods	✓	✓
Dependence on success factors	Using Grades to measure learning outcome	✓	X

Table 30: Preferences for Assessment Methods

### 5.5.3.2 Assessment Criteria

Regarding the assessment criteria according to which the lecturers would like to assess students, both perspectives are again very much in accordance. One major common point refers to the taking of initiatives and more precisely the taking of responsibilities that lecturers would like to see demonstrated by their students.

"I think that people learn by doing something. Entrepreneurship – is about doing (...) Students should be aware that they are meant to bring a result – that they should accomplish something. Entrepreneurial working also means that you have an outcome. And it's important to make that visible to students (...)" (Hilda, Dutch lecturer, participant IMEET programme).

Taking actions and actually doing something is considered to be a major criterion for the assessment and is closely related with the taking of responsibilities considered to be the essence of entrepreneurship. Furthermore, also the lecturers would like the entrepreneurial projects of the learners to be of a social value and to contribute to society.

"I would like learners to write down for themselves what they learned and what they experienced (...) and which questions they would like to deal with in order to find constructive and welfare oriented answers (...)" (Otto, German lecturer, SMILE programme, translated from German)

Feeling social responsibility and creating entrepreneurial activities that contribute to society also is an important criterion for lecturers. Furthermore, the students wish to

create something sustainable and lasting can be found in the lecturers' perspective, too. Those emphasise that it's important to see what students accomplish *after* the education and what they finally do when being out of the learning environment.

"Through reactions **afterwards** – through their behaviour – through watching what they do – not if they made a successful company – it is an attitude. We don't do grades. Capacity (...) it's got personal implications for the individuals. I possibly don't give grades. It's not the grades that decide if you do something afterwards"(Marianne, Danish lecturer, participant IMEET programme)

They suggest to measure learning outcomes after a certain amount of time as they are aware of the time that projects need to develop and that results can be seen. Hereby, they do not wish to see a successful company emerging but would like to know if the learner has personally changed towards a more entrepreneurial person – holding an entrepreneurial attitude.

Moreover, lecturers would like to assess students' ability to think and work in independent ways which is expressed in several aspects. First of all and in line with the learner's attitude, they would like to focus on processes rather than outcomes.

"So, to **overcome** that I think they have some kind of **process** that you once bring them through and then focus on the **process** and not on the output. But I think that a lot of students are **really, really** focused on the output at the end"(Ken, Danish lecturer, participant IMEET programme)

The quote refers to the lecturers' wish to focus on learning processes rather than on end results and also indicates that they consider most students to be focused on the end results of an education, which is disproved by what emerged from the students' view.

However, just like amongst the students view, there are some very few contradictory opinions to this and some lecturers would like to assess according to visible and measurable outcomes like the creation of an enterprises, its growth and profit.

"In **my** background I think that it's very important to say that **results** counts – my way of measuring is 'do we get more profit', 'do we get more employees in the companies' and so on, that's the way I would like to measure it – that's very result oriented" (Emil, Danish lecturer, participant IMEET programme).

Being result oriented and seeking to correspond to traditional success criteria such as growth and turnover very much is in contradiction to those opinions putting emphasis on



the learning and working processes and the individual development of the learner as assessment criteria. At the same time, the lecturer in the quote above seems to be aware of the fact that at present his opinion is not a common one and refers to his personal background which seems to make him prefer a result oriented perspective. Thereby, the possible impact of personal background on preferred ways of assessing entrepreneurship students becomes apparent.

Moreover, and again in line with students preferences for assessment criteria, assessment should enable learners to connect to their personal development and help them to understand how education may contribute to their learning.

"We also assess them in a minimum of two guided assessments, who talks with their team leader **each** semester. So **much** of the assessment comes through **coaching** and guidance of the individual students (...) you have this talk, but you kind of evaluate what is happening, where are the students right now. We have opportunity to give the student feedback also, the opportunity to ask other questions and **together** you can then set the framework – ok, what should we focus on? What are your learning targets?" (Hendrik, Programme director, Kaospilot programme)

Assessment hereby not only becomes a learning opportunity and a possibility to personally develop but offers the definition and pursuit of *individual* objectives of the learner. The learner gets an active share in this process as the framework of the education and its direction is set *together* with the learner.

A further important assessment criterion is related to students' ability to apply their learning in a larger context – meaning not just to pursue any entrepreneurial activity but to strive for a continuous personal and professional development in what they do.

"I see it – are they able to take the steps when they finished the education, meaning that 'are they able to combine the core understanding of the society', meaning that almost as you heard in there, it's a question of understanding fundamentals like economic, business live together with how does people work, leadership and together with the context of the environment. And I know that if you are not able to see it in a **bigger** perspective when you finish this education, I think you will get very tired after a few years and start **only** to think about yourself. And the best way we can see if we succeed is if people continue – you could say getting more and more wise, doing bigger and bigger projects and having bigger and bigger ambitions" (Karen, Danish lecturer, Kaospilot programme, bold words emphasised by interviewee).

Not only should the assessment try to investigate the personal development of students but moreover it should investigate the extent to which the learner is able to connect his learning progress with entrepreneurial actions on a level that enables him or her to keep on developing in the future which is what is entitled as 'seeing things in a bigger perspective'. Thereby, assessment takes a long-term perspective interested in assuring the ability of the learner to continuously develop beyond the duration of the education.

Comparative Analysis - Preferences for Assessment Criteria			
<i>Conceptualisation</i>	<i>Criteria</i>	<i>Learner</i>	<i>Lecturer</i>
Creation of <b>inner connection</b>	Assess <i>personal development</i> /over time	✓	✓
	Ability to define and explore <i>individual</i> objectives	✓	✓
Demonstration of <b>social</b> and <b>self responsibility</b>	Creation of <i>social benefit</i> through entrepreneurial activities	✓	✓
	Creation of value over time / sustainability of projects	✓	✓
<b>Independent</b> reflections and working processes	Assess learning <i>process</i> rather than outcome	✓	✓
	Ability to have own ideas and independent reflections	✓	✓
<b>Dependence</b> on success factors	Assess on enterprise creation/ Growth and profit	✓	✓

Table 31: Comparative analysis – Preferences for assessment Criteria II

Learners and lecturers seem to agree on the idea that assessment should seek to assess students' *individual learning* processes rather than the extent to which they achieved predefined objectives. Thereby, learning seems to be understood as an individual development towards *personal qualities* rather than the acquisition of knowledge. Both, lecturers and learners would like to assess (or to be assessed) on their ability to demonstrate *self-responsible* and *socially responsible* actions; their ability to develop own and *independent reflections* and the extent to which they succeed exploring and connecting to their inner needs and aspirations as a prerequisite to pursue an entrepreneurial activity which truly represents what they would like to do. Thereby, the lecturers would like to ensure that learners are able to continuously develop even after their education. However, amongst both learners and lecturers there are some very few counterexamples who do not seem to focus on personal development, but on the

assessment of objectively measurable criteria related to traditional entrepreneurial success factors like enterprise creation, the growth rate of the enterprise and the profit it generates. As education seems to have a strong influence on learners' attitudes and beliefs, these very different preferences for assessment criteria may be based on different educational influences on learners and lecturers.

## 5.6 Outcomes of entrepreneurship education

This section deals with the expected outcomes of entrepreneurship education and mainly comprises the answers on three interview questions. Those investigated the perceived possibilities of entrepreneurship education, the individual objectives of its participants and their understanding of a successful education. The results are considered to provide an essential contribution to the research question as the learners' expected learning outcomes give insight into their *motivation*, their personal reasons to pursue an entrepreneurship education and thus allow drawing conclusions on their learning needs and how those may be satisfied.

### 5.6.1 The learners' desired learning outcomes

Regarding the desired learning outcomes of students a recurrent theme seems to be their wish to explore their individual objectives.

"Because you're confronted with yourself and I really appreciate this – that you just start to reflect on 'where am I at the moment? Where would I like to get? What are my goals and perspectives?'" (Kathrin, German student, SMILE programme, translated from German)

In order to explore and realise their personal goals students state that the basic prerequisite is to know themselves and thus to be connected to their inner needs and aspirations.

"I think to me it's very important that an education is dealing (...) with yourself as a person (...) when it comes to creating a good business it's all about **yourself** and what you want (...) it's so essential to know yourself."(1<sup>st</sup> year student//KP)

Entrepreneurship education should enable students to connect to their inner needs and aspirations. Knowing and doing what they really want is considered to be essential in order to run a good business. Furthermore, the professional activity itself is described to take a secondary role besides their wish to personally grow and develop through exploring who they are.

"Knowledge about myself – I want to develop myself – something about self development – It's not that I'm looking for specific skills or I want a specific job – I really just want to develop myself (...) We just had a leadership course and it was about finding the **authentic** you and I think that would be one of the greatest benefits if I could find **really** authentic me and lead from that" (Thomas, Danish 1<sup>st</sup> year student, Kaospilot programme)

The learners' expected outcomes of the education seem to be less related to the creation of successful enterprise in terms of profit, but first of all they would like to personally develop and connect to their inner needs in order to achieve personal satisfaction with what they do.

**Interviewer:** "When was this education a success to your mind? When was it successful?"

**Ralf:** "I will answer with a very cheesy answer and say that 'when I found out that this was the right place for me' – because law wasn't – and I – when I became more happy and relaxed" (Ralf, Danish 1<sup>st</sup> year student, Kaospilot programme)

Discovering their individual needs in order to find personal satisfaction and happiness with what they do seems to be a major reason to pursue the education. Thereby, the creation of an enterprise is stated *not* to be an obligatory outcome of the education.

"I came here (...) because one gets confronted with oneself – which is what I really appreciate – that you reflect on where am I – where do I want to go and what are my objectives – But I did not come with the demand to start my own business – that's not why I am here for (..)" (Kathrin, German student, SMILE programme, translated from German)

Again, the quotation indicates that the expected outcome of the education may be to better connect to oneself and to explore personal objectives, and thereby, starting an enterprise is stated not to be the primary objective. The reason why learners seem to explicitly negate their intention to set up a business may be related to their awareness that this is what might be expected from them.

A further recurrent theme is that students' objectives seem to be related to the wish to connect to the world *outside* classroom. They would like education to help them understand and connect to business reality.

"I want to be able to go out in the world and create a living for myself to be self-sustainable (...) so this thing about getting an idea and make it become reality and move on, or move to some place and see 'OK, what's the need of this place' and then build something up – it's all in line with how the education works – That is like 'what have we got now?' – 'Ok, we have this assignment – we have this situation' and you **work** with it – instead of 'yeah, I've been studying at the university for the past five years and I learned all this and I can go out and teach it now' (Annie, Danish 1<sup>st</sup> year student, Kaospilot programme)

It seems that students' wish is to develop – in the scope of the education – the ability to understand and connect to real life situations through practical exercises in order to prepare for their professional life after the education. Thereby, the theoretical way which universities are considered to apply is not judged to be a sufficient preparation for their later life.

Moreover, learners would also like to develop the ability to successfully connect to their social surrounding within and outside the classroom.

"(...) also interaction – It's so good – you really feel that you are growing a little bit with the interaction with other people" (Student/14/COEUR)

Students wish to interact with others in the scope of the education in order to develop their ability to successfully interact with their social surrounding whereby this interaction is considered to lead to personal growth and development.

However, there is a counterexample of a student who does *not* seek to develop the ability to connect to others but who expects entrepreneurship education to provide him with knowledge and information on business.

"[The education was successful] when I have more knowledge than before and if ideally I learned new methods and techniques (...)" (Alex, German student, COEUR programme)

The student above clearly values the acquisition of knowledge and information as a desired learning outcome without seeking any personal development or a direct connection to the world outside the classroom. There seem to be differences in the

learners' expectations towards learning outcomes. Those might be anchored in individual preferences of each learner as pointed out in the following quote.

"One could be the knowledge about business - The other one could be the knowledge about process facilitation and how to lead a process there's a lot of like areas that we dig in to – and there's a personal side of it also – just to define what is it that you want and how you gonna get there (...) Some people in class have been resilient to these kind of lectures – but some people like it – including me – Yeah just a lot of development, communication and leadership – a lot of things"(Anna, Danish 1<sup>st</sup> year student, Kaospilot programme)

The ability to connect to oneself and to others seems to be an essential part of most students desired learning outcomes and is linked to personal growth and development processes. However, based on the counterexample, the wish to develop this quality does not seem to be a natural desire of all learners.

<b>Desired Outcomes of Entrepreneurship Education I</b>		
<i>Descriptive account of responses</i>	<i>Primary interpretation</i>	<i>Conceptualisation</i>
Discover and define individual objectives	Creating an <b>inner connection</b> to personal needs and objectives to enable personal development	CONNECTIVITY
Personal development		
Self discovery	Creating a <b>connection to world</b> outside classroom to understand challenges, create valuable networks and try out learning	Capability to <b>connect to oneself and the social surrounding</b> in order to
Knowing and being able to 'lead oneself'		
Individual satisfaction	Successfully <b>interacting with social surrounding</b> within and outside classroom	- Understand and develop own needs and objectives - Understand and master real life challenges - Successfully interact with social surrounding as current learner and future leader
Prepare for/connect to 'real life' through practical work		
Learning about know pitfalls in 'real life'	Mutual exchange and learning with/from others in education	No wish to connect to reality or social surrounding
Possibilities to apply theory in practice		
Development of networks to open doors		
Group work skills / Social skills		
Leadership skills		
Project work skills		
Communication / Interaction skills		
Achieve knowledge and information		

**Table 32: Desired Outcomes of Entrepreneurship Education I**

Moreover, students strongly express the wish to develop a further quality, which is related to responsible behaviour.

"I would just love to be a more responsible person (...)" (Metti, Danish 1<sup>st</sup> year student, Kaospilot programme)

"[The education was successful] When it encourages me as a person to take responsibility for my education (...) putting myself in a position where I feel responsibility for it and I think this education does" (Siff, Danish 1<sup>st</sup> year student, Kaospilot programme)

Students would like the education to educate self-responsibility by first of all encouraging them to take responsibility for their education. Moreover, they would also like to develop a socially responsible behaviour by realizing entrepreneurial activities which are of benefit for others.

"When I feel like I can come up with good ideas both that help me and people around me not just benefit for me" (Olafur, Icelandic 1<sup>st</sup> year student, Kaospilot programme)

Thus, a further central learning outcome seems to lie in activities which account for a responsible as well as for a socially responsible behaviour.

Moreover, learning how to take responsibility is considered to help students realize their individual objectives.

"What I really like [is] that I am provided with ideas how to continue, that I don't sit here and feel numb but that I realise "aha – it's up to me"– how do I **approach** people – how do I convince them of **my** ideas (...) and I very much appreciate that I learned that through this education and that I became aware of that" (Diana, German student, SMILE programme, translated from German)

Enabling students to recognise the responsibility they possess for the realisation of their personal objectives is a learning process which education is expected to initiate and which it furthermore seems to be able to accomplish.

Outcomes of Entrepreneurship Education II		
<i>Descriptive account of responses</i>	<i>Primary Interpretation</i>	<i>Conceptualisation</i>
Being able to make a positive change in the world	Entrepreneurial activities demonstrating responsibility for <b>social</b> surrounding	<b>Responsibility</b> Demonstrating responsible behaviour and autonomy
Developing social responsibility		
Creation of projects with positive impact for others		
Developing willingness and motivation to act	Entrepreneurial activities to demonstrate <b>self</b> -responsible behaviour	- for <b>own actions</b> and
Creation of acting possibilities to demonstrate individual abilities		- for <b>social</b>
Self-responsible and autonomous behaviour		<b>surrounding</b>
Eagerness to act / pro-activeness		
Learning how to realise individual dreams/projects/objectives		

Table 33: Outcomes of Entrepreneurship Education II

The development of a further personal quality emerges as desired outcome of the education and is linked to the learners need for a free and independent development in the scope of the education according to their individual personalities.

"What I like about this education from the beginning is that it doesn't necessarily put you in a defined box – it doesn't put you in a defined box and I associate that with a certain measure of freedom (Paul, Danish 1<sup>st</sup> year student, Kaospilot programme)

The student above appreciates that the education does not judge people according to predefined criteria but that it provides room for different types of learners and thereby allows an independent development of its participants which is entitled as 'freedom' in the quote above.

Furthermore, in order to make use of this independence, learners would like the education to give them the confidence and courage to act on their objectives.

"I would like to do something completely different from what I studied (...) and the problem was that I never had the courage and never saw the possibilities because I never succeeded and people always said "you can't do it" – and now I am here and this is the 2<sup>nd</sup> day of the seminar and I start thinking "maybe I **can** do it" and this is what I really like" (Diana, German student, SMILE programme, translated from German)

Being confident and courageous enough to pursue their objectives means not being dependent on their fears and sorrows and on other peoples' opinions which seems to have prevented students from doing what they would like to do.

The desired outcome of entrepreneurship education seems to be linked to a notion of independence. Through providing students with a greatest possible independence during their education and through encouraging those to pursue their objectives they may be enabled to think and act independently later on.

Again, there is one counterexample of a student who does not seek to develop independent ways of thinking and acting.

"[The education was successful] When I know how to minimize risk and know exactly what is expecting me and how to solve a problem – or who to ask in order to solve the problem" (Alex, German student, COEUR programme)



Instead of developing independent reflections and own solutions to problems, the student expresses a need for a certain security and predictability of reality which he would like to satisfy through the education.

In return, a preparation for unpredictable situations and situations of open change may be the capability to think independently and find own solutions to challenges.

Outcomes of Entrepreneurship Education III		
Realisation of personal objectives	Realisation of individual objectives:	
Confidence and belief in oneself and own ideas to enable their realization	Capability and confidence to pursue own ideas	
Courage to pursue own objectives		
Equipment with means to start own business		Development of <b>Independence / Capability for Independent thinking</b> in order to:
Unspecified objectives of education open up wide spectrum of job possibilities	Open/unlimited possibilities of education - no dependency on fixed/predefined job profiles	- generate creative ideas
Capability to recognise and exploit opportunities		- to dare pursuing these ideas
Enables unlimited job possibilities		- to recognise and act on unlimited possibilities
Outcome not dependent on enterprise creation		
Possibility to fail and experiment / no fear of failure	Independence from self-limiting fear of failure	
Inspiration: Gives different & new perspectives and thoughts		
Develops creative thinking / Capability to develop ideas / enables creative ideas to innovate	Space for unlimited & open idea development	
Curiosity / Open mindedness towards the world		
<i>Learn to minimize risk and unexpected situations</i>	<i>Need for security and predictability</i>	<b>No need for independent thinking</b>

Table 34: Outcomes of Entrepreneurship Education III

We may conclude that the outcomes of entrepreneurship education in the eyes of the learner are very little connected to the creation of an enterprise and the achievement of appropriate knowledge to do so. Instead students' objective seems to be strongly linked to personal growth and development and therefore the education of certain personal qualities. One of these qualities may be captured with the term '*connectivity*' as students would like to develop the ability to connect to the world *outside* the classroom as well as to their *social* surrounding but also to their *inner* needs and aspirations in order to realize

those. A further quality they would like to develop through the education is a *responsible* behaviour by autonomously realizing entrepreneurial activities. Furthermore, they would like these entrepreneurial activities to entail *social* benefit for others. And finally, students would like to develop the capability to *independently* act on their objectives and realize those without depending on limiting expectations or the fear to fail.

The following quote very well summarizes to what extent the development of *all* of these qualities seems to present a certain *entity* of the learner's desired learning outcomes.

"I feel that during my entire education we were hardly ever prepared for professional life [*connecting to reality*] – you get some facts and some topics and subject areas in which you become well versed but you are not at all educated to either integrate that in a reasonable way or to somehow be able to recognize yourself where to use that stuff and how to achieve that by yourself [*independent thinking*] That has been completely neglected (...) I do not feel competent at all and I know people who have been equipped with that along their way and who handle that with much more self-confidence [*independence from others opinions*] and who say "I've got an idea and now I will look for the right people [*social connectivity*] and I will realize it [*responsibility*] (...) And that was the reason why I try to take – maybe far too late – but still try to take the opportunity to enrich myself in that respect (...)" (Clemens , German student, SMILE programme, translated from German)

The quotation very well reflects the learners wish to develop the above introduced qualities as he feels to lack all of them. At the same time, these qualities are described to be something learnable that others have been "equipped with on their way" and which the learner above is now hoping to develop.

To sum up, a successful entrepreneurship education from the perspective of the learners seems to be related to the discovery of their individual goals and aspirations while the role of education is described to consist in the development of personal qualities which enable learners to achieve these goals.

However, the wish to personally develop in the scope of an entrepreneurship education does not appear to be a natural desire and some students – even though very few – do not express the wish for self-development but focus on the pure acquisition of knowledge.

### 5.6.2 Learning Outcomes from the Lecturers' Perspective

Seen from the lecturers' perspective, the aspired learning outcomes are what shapes and determines the structure and realization of the education. Checking the lecturer's perspective against the view of the learner is meant to provide important insights into the extent to which the lecturers are aware of the students' motivations and expectations.

The result of the analysis indicates that both points of view are very much in line and mainly focus on the development of certain personal qualities as a major outcome of entrepreneurship education, which is outlined in the following.

In line with the students wish to explore and discover their individual objectives, lecturers, too would like them to discover their goals and start realizing those.

"One of the objectives is to actually look at what is **your** personal goals and believes and how do you get to reach them" (Tom, Danish lecturer, Kaospilot programme)

It seems that also the lecturers would like students to connect to their inner needs and aspirations and to become aware of what they would really like to do. Therefore, the desired outcome of entrepreneurship education seems to be related to self discovery and the creation of an inner connection. Furthermore, lecturers would also like students to develop the ability to connect to their social surrounding in order to communicate their ideas.

"(...) and I want people to be part of their surroundings or their environments (...) I am very bad at – in conversations with very introverse people – I want them to be **outgoing** to show what you want and to look around you (...) So, that's the kind of mission I have" (Jacques, Dutch lecturer, participant IMEET)

The lecturer would like students to be able to actively connect to their social environment by being 'outgoing' and actively entering into a communication with their environment which is considered to enable students to successfully communicate their ideas.

Furthermore, and again in line with the students' expectations, lecturers very much support the need to connect learners with entrepreneurship reality through practical experiences and by allowing learning in the world outside the classroom.

(...) I think in most business schools the idea is first you have to learn **all** the steps and then you are allowed to start your business – but I think you have to start at **day 1** – with learning business planning also but also you have to **go out** and learn and experiencing entrepreneurship" (Immo, Dutch lecturer, participant IMEET programme)

As outcome of the education, students should have learned to connect to reality in order to understand and navigate through the professional world.

Moreover, there is a further personal quality which lecturers would like learners to develop during the education which is the ability to actively take responsibility for their objectives and to first of all become aware of their possibilities for action.

"(...) I am **very satisfied** when a student **not** acts as a **student** - because normally students say I would like it – but I can do nothing about it because I'm a student and he is a teacher – and that's it - [the objective is] to create a conscience of the fact that they can have influence on the assignments – on what they do – on their trips to companies"(Immo, Dutch lecturer, participant IMEET programme)

Hereby, lecturers would like students to realize the extent to which they can influence things by taking responsibility for what they would like to do. In most cases this seems to require that they leave their traditional role as a student which is further outlined in 4.2.2 (role understanding of the learner).

Moreover, and again in accord with the learners, lecturers would like learners to develop and demonstrate *social* responsibility in the scope of their entrepreneurial activities.

"**Everything** that we do here has to create a **positive** difference. So, very often, when the students do a project or whatever – we ask them 'what is the positive difference that you gonna make with this?' They should not do a project for the sake of the project but it has to be a project creating a **win-win-win** – that it needs to make a social positive difference for you as an individual – for the organisation that you are part of and for the world that's around us" (Hendrik, Danish Programme Director, Kaospilot programme)

Students should develop the ability to take actions which go beyond their personal benefit and demonstrate social responsibility.

Furthermore, the lecturers would also like students to develop confidence and courage to finally act on their objectives.

"[The objective] is to make contact with the world – to listen to hear to ask questions – to have the **guts** to do things – to have some confidence in themselves – for example one student will never call a company but **one** student will say "OK maybe that's a company that has information for me – so let's call" (Immo, Dutch lecturer, participant IMEET programme)

The confidence that lecturers would like students to develop seems to be related to the idea of freedom and independence to do what they would like to do and not to depend on other peoples' opinions or on their fear to fail. Furthermore, the quotation emphasises the importance to listen and to 'ask questions' and thus to develop a critical way of thinking and perceiving the world.

However, there are differences in the lecturers' opinion on the question whether entrepreneurship education should necessarily lead to enterprise creation. For most of the interviewees the objective is to develop a certain kind of behaviour within students, whether they finally become an entrepreneur or not.

"[The objective of entrepreneurship education is to] create more entrepreneurial behaviour – and that's something different than becoming an entrepreneur – I think an entre- or intrapreneur or an extrapreneur it's a kind of behaviour – and I want to create this behaviour" (Jacques, Dutch lecturer, participant IMEET programme)

Developing entrepreneurial behaviour within learners is described as desired learning outcome of the education and is clearly distinguished from developing entrepreneurs as those may not necessarily behave in an entrepreneurial way.

But while most lecturers focus on the personal development of students towards a more entrepreneurial behaviour, very few lecturers would like to measure the outcome according to the actual business creations.

**Hans:** "The possibilities are when students actually want to start a business themselves after being in the programme (...)"

**Interviewer:** "(...) what is for you a successful entrepreneurship education? When has it been successful?"

**Hans:** "When has it been successful? For me if students really start an enterprise – that's the most – the best reward for a teacher (...)" (Hans, Dutch lecturer, participant IMEET programme)

The creation of an enterprise as a result of the education is described as the greatest reward for a lecturer and seems to be the best possible outcome for a small part of the lecturers. Furthermore, and again in difference to the general idea of educating towards self-actualisation and satisfaction, one lecturer would like the students' enterprise to generate profit and turnover as most important factor to measure the success of their education.

"[success is measured according to] more they earn a **bigger turnover and more profit** (...) It's not the only one [success factor] but the **most important** one (...) it's very important to earn profit" (Emil, Danish lecturer, participant IMEET programme)

Apparently, there seem to be differences in the lecturers' priorities regarding the desired outcomes of entrepreneurship education and while a large majority of the respondents would like learners to first of all achieve self-fulfilment and satisfaction through developing a more entrepreneurial behaviour, a minority of respondents focuses on the creation of businesses and the generation of profit as an attribute of a successful education.

Comparative Analysis of Expected Learning Outcomes			
<i>Conceptualisation</i>	<i>Attributes</i>	<i>Learners</i>	<i>Lecturers</i>
	Create inner connection	✓	✓
Connectivity	Connect to social surrounding	✓	✓
	Connect to entrepreneurship reality	✓	✓
Responsibility	Develop self responsibility	✓	✓
	Develop social responsibility	✓	✓
Independent thinking and acting	Develop confidence and courage to pursue own objectives	✓	✓
	Be aware of open possibilities	✓	✓

Table 35: Comparative Analysis of Expected Learning Outcomes

We may conclude that the outcomes of entrepreneurship education in the eyes of learners and lecturers are very little connected to the creation of an enterprise and the achievement of appropriate knowledge to do so. Instead, the objectives seem to be strongly linked to personal growth and development of the learner and the education of certain personal qualities. Those are outlined above and are tried to be captured in personal qualities entitled as *responsibility* for the self and the social surrounding, the

ability for *independent thinking* and acting, and *connectivity* in the larger sense of connecting to inner needs and aspirations, to the social surrounding as well as to the world outside the classroom.

However, a few examples amongst both – lecturers and learners indicate that there seem to be different opinions on what should be the outcome of the education and relate those to the acquisition of knowledge, the creation of start-ups and the generation of profit as opposed to personal growth and development of the learner.

## 6. DISCUSSION AND CONCLUSIONS

This chapter pulls together the implications of the research results (chapter 4) and discusses their contribution to the current understanding of entrepreneurial learning (chapter 2). It then concludes on the overall implications for an entrepreneurial learning theory and suggests a new approach to understanding learning from a social constructivist perspective in the particular context of university education.

The thesis is based on the following research question: *If learning is based on knowledge from lived experiences, how can university students, who do not possess entrepreneurship experience, learn to be entrepreneurial?*

### 6.1 Stimulation of learning

The learning process of university students seems to be profoundly experiential and based on all kinds of interactions with their world. However, unlike the learning of entrepreneurs, that is argued to be based on their entrepreneurship practice, students' learning starts with the input they get at *school* and is then *socially constructed* based on this input – through discussing, questioning, critically considering the information they get together with their peers and their lecturers. This social exchange in the scope of the learning environment shapes their understanding of an issue and the knowledge creation process. But more importantly, it seems to allow a sort of testing and locating of their learning within a *safe* and risk free environment, which is not the case for the learning situation of entrepreneurs who learn within and from the high risk environment of their daily practice. The *low-risk* environment of education allows students to test the theoretical input and see how it works out in an experiential situation – having the possibility to make mistakes in order to learn from these mistakes. But more importantly, to gain learning from these trial and error processes, the education provides the possibility to critically and consciously *reflect* on their experiences – individually and within their social environment. Learning seems to be a cyclical process for them. To complete this cycle, the newly gained insights need to be tested in experience and practically applied.



The results of the study help us to gain insight into how deep learning seems to arise, starting with a social but critical exchange of new information amongst peers and with lecturers to an experiential exposure to practical learning situations including reflection cycles and to a later application in their professional life. And more importantly, this process allows the learner to gradually take on and demonstrate more and more responsibility for his or her learning and attributes space for personal growth to the education.

## 6.2 Role understanding of learner and lecturer

Regarding the understanding of the lecturers' role, *responsibility* clearly emerges as a central theme in the learning process. Responsible behaviour for his/her learning enables students to actively engage in the education, to participate in discussions and projects and moreover to contribute to group learning.

Learners openly addressed their wish to shift from a 'passive consumer of knowledge' (in line with behaviourism) towards an active participant in the learning process. This is implicitly confirmed by the students' understanding of their role as responsible learners and exceeds the lecturers' expectations in that they demonstrate responsibility beyond their own learning but also for the learning of their peers and the work of their tutors, thus for the overall improvement of education.

Furthermore, students attach great importance to personally relating to the lecturer and her experiences as an access to learning. It seems that through the lecturers' stories and shared experiences, students in some way are able to *experience* this knowledge and in that way learn from it. Thus, as some sort of alternative to first-hand experience in the business world, learning seems to occur through experiencing the knowledge of the lecturer. The more authentically this experience is shared, the better students can live through and learn from it.

And while responsibility seems to be what 'gets them going' and motivates them to *engage in* the learning process, students consider open mindedness, curiosity and criticality to be needed to *process* the information they encounter and to discuss, analyse and evaluate whether and how it fits into their existing knowledge schemes and patterns. Thereby, learning appears to be an iterative process altering the discussion of

knowledge with others and its critical evaluation by the self, eventually developing new knowledge patterns.

Regarding the lecturers' understanding of their role, it appears that those aim at preparing students for a certain stage of development where they are *personally ready* for entrepreneurship. The targeted developmental stage is strongly connected to autonomous and self-responsible learning behaviour and the ability to think independently. We may conclude that lecturers understand their role to lie in the *stimulation* of learning in the sense of *provoking an appreciation of how to learn and what to use to learn*. The successful mastery of the learning process may be described as a particular sort of *maturity* which, in essence, describes a *readiness* for the entrepreneurial venture.

### 6.3 Limitations to entrepreneurial learning

The limitations – what entrepreneurship education cannot accomplish – are located on many levels. There are limitations within the discipline which is hard to define, and does not prepare for a particular job profile; limitations on the level of programme which may be restricted through time and financial resources. But most importantly, learners identify *themselves* as only barrier to an entrepreneurial behaviour. This accounts for a profound feeling of *responsibility* for their learning and furthermore demonstrates awareness and understanding of what they lack to accomplish their objectives. At the same time, this may be regarded as a level of *personal maturity* that seems vital to their entrepreneurial development as it enables them to see developmental needs and take action accordingly.

This corresponds to the constructivist idea that learning is a construction process of the individual. It may be compared to the process of accommodation; the organism's desire for balance when being confronted with new knowledge that is in mismatch with existing meaning schemes. The learner's awareness of inner limitations presents the first step in recognising a mismatch (disturbance). Hereby, responsibility emerges as essential quality of entrepreneurship learners as it enables them to actively engage with the education and overcome limitations (create equilibration).

## 6.4 Assessment of learning outcomes

Regarding the assessment of learning outcomes, it most obviously emerges a general lack of a need for reward in the common sense of assessment through grading and standardized measures. The learners' overall objective is personal satisfaction with what they learned and that it fits with their self and their individual objectives. As part of this intention, and in coherence with social constructivist assumptions, learners would like to be evaluated based on how they *add value* – to the education and through their actions – thus based on their contribution to the social learning process and their ability to socially construct learning for themselves and for others (Gergen 1999). Again, responsibility for their learning and the learning of others (McNamee 1999) arises as profoundly anchored inside the entrepreneurship learner and spurs the process of learning and value creation. As opposed to suggestions from the behaviourist paradigm, entrepreneurship learners refuse standardized methods of measuring and comparing the 'success' of their education. Their argumentation is profoundly constructivist in that they would like lecturers to look at their unique process of value creation – bound into a particular social context (Jack et al. 2004) and fitting with their individual personality (Anderson 2000; Karp 2006). Both lecturers and learners are aware of the subjectively constructed nature of these outcomes and consequently agree on the difficulty to objectively compare or measure those.

## 6.5 Outcomes of entrepreneurship education

Dealing with the expected and desired outcomes of the education, the implications of the findings demonstrate again strong coherence with social constructivist assumptions. Unlike the behaviourist assumption that learning should result into measurable behaviour (Skinner 1953) students explicitly refrain from business creation as logic consequence of the education. Just as social constructivism suggests learning to be a fluid (Anderson 2000) and constantly evolving (Cope 2005) process, students remain open minded towards their objectives and would like them to fit with their self and their individual aspirations (Karp 2006).

But even though their expectations are not focused on a specific outcome, they focus on the *process* of learning and developing as entrepreneurial person and thereby draw a

direct parallel to the learning process described earlier. Most explicitly, they would like to develop towards a *responsible* person capable of taking action and realising their objectives. But for most learners this responsibility exceeds the dimension of their individual lives and addresses a *responsibility on societal* and thus group level. They seek to add value for society through their actions and to contribute on a level beyond individual satisfaction.

While responsibility emerges as a major targeted outcome, it appears in particular relation with further personal qualities. One is the desire for successful *connection* to their *social environment* but also to their *inner needs and aspirations*. And the other is related to *independent thinking* and the ability to form own ideas and opinions regardless of social norms or expectations.

Moreover, these qualities are also confirmed as targeted outcomes from the lecturers' perspective. As pointed out in the discussion of their role understanding, those seek to spur the learners' development towards these qualities and seem to relate the full development and successful mastery of those to a stage of *personal readiness* for an entrepreneurial activity.

### 6.6 The entrepreneurial learning processes of university students

The overall conclusion that is drawn from the research findings is that social constructivism provides a good explanation of entrepreneurial learning processes in a university context. However, learning processes of students are different from those of entrepreneurs and are not based on entrepreneurship practice in the first place.

Regarding the process of accommodation, entrepreneurs are supposed to encounter new information based on their entrepreneurship practice and to assimilate and accommodate this information on the basis of their existing experiences (Corbett 2005; Fletcher 2006). Moreover, the entire process is based in the complex and rapidly changing environment of high risk (Gibb 2002; Neck and Greene 2011). This process is exemplified below.

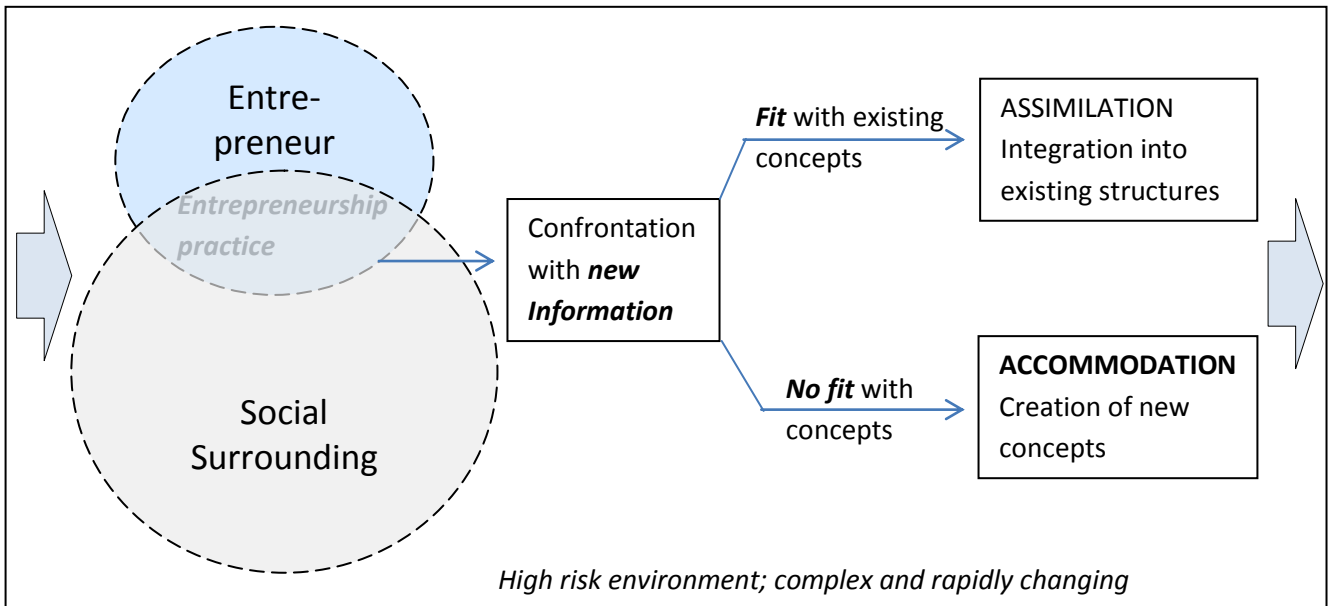


Figure 5: Entrepreneurial learning process of entrepreneurs

While the learning process of the entrepreneur begins with and is based on his practice, the research is concerned with the learning process of university students who do not yet possess professional experience to build their learning on.

The response that is provided by the research results is that learning processes of students are coherent with social constructivism but have another point of departure and happen in a different framework.

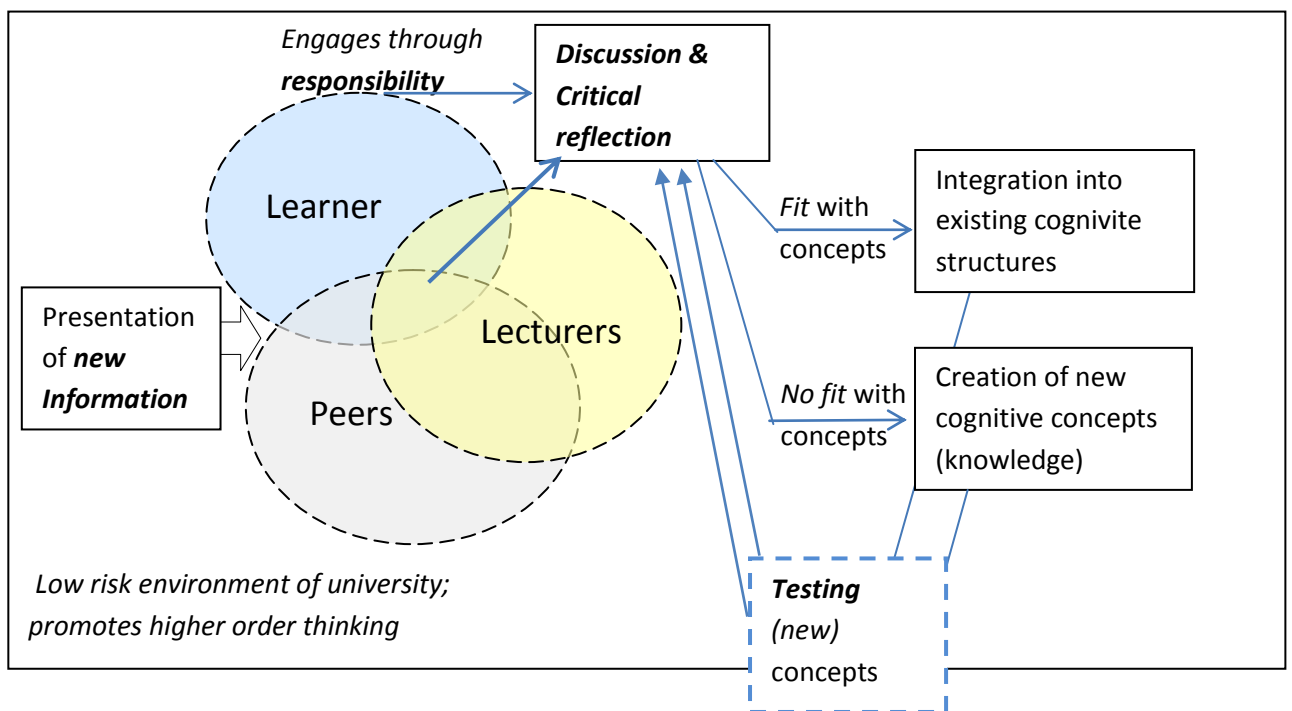


Figure 5: Entrepreneurial learning process of entrepreneurship students

Students' learning is not experiential in the sense of learning-by-doing as for the entrepreneurs, but it is about *experiencing knowledge*. In their education, students are confronted with new information and knowledge which they experience and create meaning from in a similar way than entrepreneurs do experience reality – through social interaction and a critical evaluation of how the experience fits into existing concepts.

In that sense, social constructivism as a theory of learning emerges as a kind of surrogate for the experiential learning process. A social constructivist learning imitates this sort of experience in an informed way – through placing it in the university context. Moreover, the university environment is risk free. It stimulates independent reflections within a social learning context and thereby promotes higher order thinking.

Looking at the process, *responsibility* clearly emerges as the driving force of the learning process and enables learners to engage in learning, to initiate discussions, reflect on practices and translate this into experiences. Learning appears to be a co-creation of knowledge, constructed in social interaction with peers and lecturers, whereby at the same time learners apply criticality to weigh up their own experiences against the light of others' experiences and to judge whether and how their experiences fit with their existing concepts and their self and self-knowledge.

Thereby, learning is a cyclical process altering experience and reflection. But as opposed to the learning of entrepreneurs, learning of students starts with entrepreneurial knowledge that is fragmented and incomplete. This knowledge is compared to what they know and don't know yet – through individual and social reflection processes.

Their ability to recognize their lack of knowledge and the need for further experiences may be considered a sort of *maturity* that is specific to entrepreneurs as it will enable them to constantly develop towards a more complete understanding of their discipline. It is related to the process and the way they succeed in grounding knowledge in their learning. Thereby the way that learners *experience* knowledge turns into the learning process itself and students are educated towards reflective practitioner as called for by many scholars (Jack 1999; Schön 1983).

## 6.7 Entrepreneurial Maturity: A process of personal development

"And no, we don't know where it will lead. We just know there's something much bigger than any of us here" (Steve Jobs, 2010)

The outcomes have provided insights into the learning processes of entrepreneurship learners. When looking at the *learner* within this process, it seems like entrepreneurial learning is interconnected with a process of personal development. Thereby, three basic personal qualities emerge as essential to the process.

- a) The first is expressed in the learner's wish to be a *responsible* person capable of taking action and realising her objectives. But for most learners this responsibility exceeds the dimension of their individual lives and addresses a *responsibility on societal* and thus group level. They seek to add value for society through their actions and to contribute on a level beyond individual satisfaction.
- b) Furthermore, learners demonstrate the desire for successful *connection* to their *social environment* but also to their *inner needs and aspirations*.
- c) The third quality is related to *independent thinking* and the ability to form own ideas and opinions regardless of social norms or expectations.

But these qualities do not just co-exist or develop in parallel. Rather they seem to develop in some sort of hierarchical system and some seem to be harder to achieve and less reconcilable with the others.

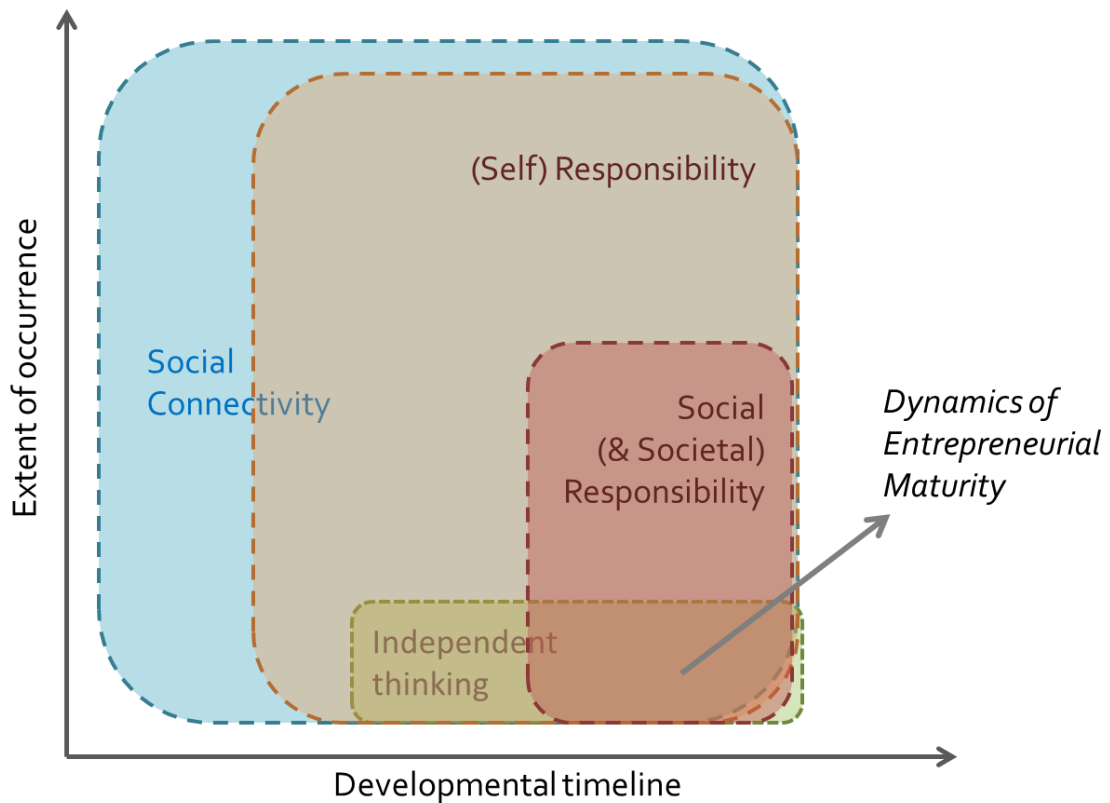


Figure 6: Dynamics of Entrepreneurial Maturity

A basic quality of learners is linked to taking responsibility for their actions and feeling responsible for their learning. As pointed out above and as reasoned from a social constructivist learning perspective, responsibility seems to be the basic driving force in any learning process. It is strongly developed within most entrepreneurship learners and does not seem to conflict with any of the other values.

However, the most basic quality of this developmental learning process seems to be the ability to connect to their social environment, which in this case are peers and lecturers but also the external entrepreneurship environment. This need for social connection may be argued from the perspective of human nature that is considered to be essentially social (e.g. Hergenhahn 1993; Jarvis 1998; Ormrod 1998).

However, as part of a need for connectivity in a larger sense, learners find it much harder – but not less desirable – to connect to their *inner needs and aspirations* in order to understand their entrepreneurial objectives and to make those fit with their self and circumstance as suggested by Anderson (2000).

Closely related to the difficulty of understanding and speaking up for ones needs; learners have most difficulties to develop *independent thinking* and to reconcile it with



their need for social connectivity. Independent thinking requires criticality, also towards other peoples' opinions and consequently challenges the learner's social relations. While independent thinking was clearly pointed out as a targeted learning outcome, only few learners seem to have developed it and successfully went through a stage of inner conflict regarding their general wish to agree with others and to have their own opinion at the same time.

Finally, it seems that this process of personal development concludes on a stage where learners have successfully integrated their seeking for both social integrity *and* individuality and on which they are able to see their activities in the light of a "bigger picture". At the same time, this stage seems to mark their individual *readiness* for entrepreneurial activities. Thereby, it appears that learners develop towards a stage of personal maturity which harmoniously reconciles all previous qualities and entrepreneurial activities exceed the objective of self-actualization but seek to contribute value on a wider societal level.

### 6.8 Contribution, limitations and outlook

This work identifies the particular learning processes of entrepreneurship learners from a social constructivist perspective and provides explanations to the question how entrepreneurial learning – as experiential form of learning – is enabled in a university context given that learners cannot build on entrepreneurship experience from their own business. While there is a number of literature sources deriving parallels from learning theory to how entrepreneurial learning can be stimulated, there is little scientific investigation of the learning process within an education environment. The study may be the first to investigate this process from its grassroots by exploring basic key issues such as the stimulation of learning, the role understanding of learners and lecturers, its limitations and desired outcomes and how these may best be assessed. The study thus contributes a deeper understanding of how these key issues are constructed from the learners' and the lecturers' perspective which furthermore entails a number of implications. These contributions, their implications and limitations are specified below.

*Influence of education on students' learning process*

One major contribution may be the insight that both the learners' and the lecturers' seem to have very coherent constructions on the learning process. As the coherence of their perspectives correlates with the duration of the examined programmes we may conclude that an education based on social constructivist principles seems to have significant influence on the learners understanding of the learning process. In return, this implies a major limitation. As all examined educations were based on principles of social constructivism, it remains unknown whether an education based on a different learning theory would have had the same impact on learners and whether constructivist learning is a natural or in this case an imposed preference of entrepreneurship learners. This limitation is strongly connected to the fact that the sample is based on self-selected participants in a social constructivist learning environment. This also increases the probability of a coherent outcome confirming social constructivism as a basis of entrepreneurial learning. Thus, control groups should be added and further samples should be examined of programmes that are based on other learning theories as well as of programmes focusing on subjects other than entrepreneurship.

### *Understanding of entrepreneurial maturity and the learning process*

Despite the previously mentioned limitations of the chosen sample, the findings demonstrate how social constructivism has strong explanatory power regarding the entrepreneurial learning process of students and how this process compares to the experiential learning experience of entrepreneurs.

Obviously the learning process of students differs from how entrepreneurs learn, mainly based on the learners' lack of initial experience to build their knowledge from. Thus, a major contribution of this thesis is the response to the research question. The findings provide insight into how entrepreneurship students construct knowledge in the scope of their education – based on experiential forms of learning and involving a number of personal qualities. These qualities are at the same time demanded by the learning process and consequently developed within learners in the course of the education. Learning is depicted as a process of co-creation of knowledge, constructed in social interaction with their learning environment, whereby learners apply critical reflection. Responsibility emerges as a thriving force of the process.

Consequently, the contribution of the findings is twofold. On the one hand, they provide better understanding of the learning process itself, its single elements and the dynamics

with which they are interconnected. But at the same time, the findings provide insight into the personal development process of the individual which is stimulated and shaped while going through the learning processes. The outcome of this personal development process is referred to as entrepreneurial maturity.

Thus, the thesis contributes the idea that entrepreneurial learning is at the same time *individually constructed* as well as based on particular *developmental stages*. Thereby, the concept of entrepreneurial maturity somehow provides a name to a highly complex phenomenon; bearing in mind that this is a double-edged sword in that a name can potentially enable communication about a phenomenon as well as inhibiting its understanding if the name is confused with the phenomenon itself.

### *Pedagogical implications: Stimulating entrepreneurial learning*

The findings also have a number of potential implications on how entrepreneurial learning can and should be stimulated in the learning environment. If entrepreneurial learning is essentially based on personal maturity processes, this eludes all pedagogies aiming at pure knowledge transfer and favours those aiming at individual development.

This also implies the question whether and how we may measure the learners' level of "maturity" in the learning process. Assessing the learners' state of development could be particularly helpful to adapt the design and pace of the education to their learning progress. It would thus be a means to achieve a better fit between educational demands and the learners' individual readiness to respond to those. On the other hand, we may ask to what extent we can and should try to measure the highly complex and mostly unconscious development of individuals – running the risk of misjudging the learners' developmental stage and potentially inhibiting his or her learning.

However, as part of the learning process category "learning to become an enterprising individual" (Fayolle and Gailly 2008), the identified qualities of entrepreneurial maturity may serve as a targeted outcome of entrepreneurial education in general and across disciplines and educational levels. Based on the results of the study, a number of implications on how to stimulate this learning process on a pedagogical level (where and how to learn) become visible. To help learners engage in the learning process, entrepreneurial education should consider the following:

- Create awareness that responsibility for learning outcomes is with the learner

- Encourage co-creation of the learning process and an active contribution of value by learners
- Encourage independent thoughts and opinions of learners, and confront them with disagreement and opposite opinions of their peers
- Allow for a greatest possible interaction between peers, with the lecturer, and with the world of entrepreneurship to enable discussion, reflection and making sense of the information they are confronted with
- Allow for uncertainty, complexity, multiple answers and an open learning process which will challenge students' search for their own answers and lead them closer to their own learning needs and interests
- Generally, allow for individual development processes of the learner by pointing out options but encouraging self-responsible choices

However, the major contribution of the thesis remains on the level of the learning processes and does not touch on methods or contents which may be seen as a limitation. At the same time, this opens up to the creation of a potentially endless number of educational methods which may also be perceived as a creative strength of the contribution rather than a limitation.

Looking at current entrepreneurship educations which are bound into the constraints and regulations of the educational institutions, we may have to start by revising the educational framework itself and the necessary changes to facilitate the implementation of appropriate pedagogies.

### *General limitations of the study*

A limitation certainly lies in the size and nature of the sample. Either a larger sample within the represented cultures should be examined or a smaller number of cultures should be focused to strengthen the explanatory power of the outcomes. However, the sample does assure a cultural consistency within Europe and, as no contradictory outcomes were observed; significant validity may still be attributed to the findings.

A more general and implicit limitation of the findings is grounded in the social constructivist approach to the research and the general perception of research findings to be constructed by the researcher. Those remain the result of subjective interpretations

and do not provide an account of a general 'reality', but the one that the researcher has understood from the data.

Furthermore, the question remains to what extent the outcomes were influenced by the choice of the sample as the programmes were based on social constructivist principles and their participants were self-selected. But also it is unknown whether or not the identified qualities are desirable – and more importantly – *achievable* outcomes for learners of different kinds of entrepreneurship programmes, but also for those of other disciplines, especially the ones considered to be less entrepreneurial. This refers to the question whether the personal development described above is universal and part of a natural learning process or if it may only be achieved by some?

Thus, many aspects about entrepreneurial learning remain to be understood and regarding the concept of maturity further investigations need to be realised to better understand its nature and dynamics and eventually stimulate its development within learners.

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