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Entrepreneurship Education – the New Challenge Facing the Universities

– A framework or understanding and development of
entrepreneurial university communities

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PREFACE.

Innovation, entrepreneurship and intrapreneurship are high on the political agenda. And the universities are intended to play a central part in a process where the paramount objective is to ensure continued development and mediation of application-oriented knowledge through innovation and patenting in order to maintain a secure platform for employment, economic growth and increased welfare. This process has been under way in several OECD-countries for the past four to six years. One means to further this process has been an attempt from political quarters to motivate the business community and institutions of higher education to an increased degree of cooperation with respect to research and, more recently included, education.

Such a goal-oriented interaction between political system, universities and business sector is frequently referred to as the “triple-helix-model”. The implementation of this mindset or model could be a potential source of inspiration in the development of the knowledge advances necessary for innovation, development and growth in an increasingly globalised knowledge-and information society. To most universities this unaccustomed extramural role frequently requires new ways of thinking and new ways of doing things. The individual university will have to take a stance as to whether – and if so – how, and at what pace it wishes to develop towards a variant of the so-called “Entrepreneurial University” which is characterised by a high degree of openness towards the surrounding society – the business sector in particular.

This development in the expectations to the universities’ social role has resulted in a considerably increased interest in entrepreneurship and innovation as areas of research and theory. On a global scale there has been an equally tremendous interest in entrepreneurial education, teaching and research – in Entrepreneurship Education. This research area integrates research in entrepreneurship as theory and discipline with research in how education and teaching might stimulate the application and utilisation of this knowledge in practice.

There is a desire from business sector and political quarters alike that the students in addition to developing strong professional competence – including interdisciplinary competence – within their field (e.g. medicine, law, economics, psychology, etc.) should also develop an interest as well as competence in adopting a generally enterprising and innovative approach in their work. In continuation of this it is further desired that the teaching provide the students with the incentive and competence to either start their

own business (entrepreneurship) or to detect new commercial opportunities in their job as employees in an existing organisation or business (intrapreneurship).

It is this development which constitutes the background for the completion of this project funded by the Danish National Agency for Enterprise and Construction. Part of the survey is based on studies conducted at Danish and other European university environments with experience in entrepreneurship education and research. The empirical material is supplemented with literature studies. The results of our findings have been published in a series of reports and publications in international journals and as conference presentations in and outside Denmark.

Our studies abroad, our personal experience from executive functions within the Danish university system, and our experience as teachers and as researchers indicate that to meet the requirements associated with their new role, the universities will be facing a series of challenges and possibilities which will have far-reaching consequences for the university community – internally within the academic disciplines and externally in university interaction with the surrounding society. It has frequently been necessary to establish new organisational structures and to implement new criteria of success with respect to performance evaluation of either university or individual employee as measured against the new, more outward and practice-related role of the university.

Our studies further indicate that educating and teaching for and not just about entrepreneurship should include different theories and methodology from the ones ordinarily applied. Traditional management theory and micro economic models might even constitute a barrier for new thinking and change and, hence, for the basis of the implementation of entrepreneurial action.

As to decisions concerning pedagogy forms, the personality developing dimension of university education should, according to research in “Entrepreneurship Education”, be pursued much more consciously. Education and teaching could advantageously be seen as a process, inspired by didactic and pedagogical theories and models, consciously aimed at integrating objectives, context and target group. This puts considerable professional and pedagogical demands on the teacher, and also presupposes a capacity for working practice-oriented and academically at the same time.

On the basis of our studies and our experience, we believe that the “new” university role may be concluded to present a series of new possibilities, but also a series of new challenges. Challenges that the universities have as

yet not fully perceived, and neither do they possess the strategic, tactical or operative tools to tackle them. The individual university should preferably consider to which degree it is prepared to play the role as entrepreneurial university and also to which degree entrepreneurship teaching should constitute an element of the curricular content. In compliance with current educational policy, all institutions of higher education shall provide students with an opportunity to take courses in entrepreneurship at credit granting levels. This is a statutory obligation contained in the universities' development contracts.

With this report we attempt to develop a cohesive frame of reference explicating the possibilities and challenges facing the universities in their new role. The frame of reference is based on well-established theories and on empirical studies.

We hope that the results of this project will be a source of inspiration to the individual institutions of education having education in entrepreneurship (entrepreneurship education) on their agenda. We also expect the project to contribute favourably to research within the field of "enterprise education" – a new research area in notable international progress. Further, the results will be applicable in the decision-making process at business -and educational policy levels concerning the framework conditions and concrete initiatives to be implemented for purposes of stimulating the involvement of research -and educational system in the establishment and development of more knowledge-based businesses.

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CHAPTER 1.

THE NEW ROLE OF THE UNIVERSITIES?

For purposes of developing the so-called framework conditions and for prompting concrete initiative there is, in most OECD- and EU-countries, an increased interest in an appraisal of the frequently quite complex factors influencing the establishment of new enterprises and the innovative development of existing. This interest derives from the philosophy that innovation and entrepreneurship remain sources of paramount importance in matters of employment and economic growth and hence constitute the basis for increased societal welfare.

This development is also reflected in Denmark where research into education in innovation, entrepreneurship and intrapreneurship are highly placed items on the political agenda, and it has further resulted in a proposal of inter-ministerial cooperation.

At a meeting of the Danish Council for International Development Cooperation, the Danish Government presented a paper suggesting that at higher educations in Denmark, the focus on entrepreneurship and enterprising activity is insufficient, and that in this respect Denmark should seek inspiration in America (“Denmark in the Global Economy”, the Danish Ministry of Economics and Business Affairs, January 2006). However, several surveys reveal an increase in courses in entrepreneurship and enterprise offered at Danish universities and that, in the student body, there is a similarly positive development towards an increased interest in this area. Still, this interest is only a first tentative step towards the final decision to start up a new business. In this respect Denmark and Danish universities cannot keep up with America (“Entrepreneurship – the Enterprise Barometer of the Universities”, the Danish Ministry of Science, Technology and Innovation, 2004).

Box 1.

See e.g. the Danish Government’s plan “Promoting Entrepreneurship – a plan of action” (January 2003) and the paper by the Danish Ministry of Science, Technology and Innovation “Focus on Enterprise and Independence at Universities” (March 2003). In the EU innovation, entrepreneurship and the universities’ role have been on the agenda for the past five to six years (“Communication from Commission- The role of the universities in the Europe of Knowledge, Brussels, 2003”).

The upsurge in enterprise politics and the extension of the traditional university domain and focus are common traits of current national programmes for industrial promotion and initiative. While the focus traditionally has been on growth as generally expressed in numbers of newly established businesses, there is now an increased tendency to focus on research and education as sources of commercial inventiveness and innovation because the knowledge-based and high-technology enterprising businesses are seen as an element of paramount importance in the endeavours to create improved competitiveness in the global knowledge society. Thus, augmented commercialisation of the knowledge generated at universities and institutions of higher education is seen as one means to achieve this goal. The prospects envisaged are a trade in knowledge in line with patents and licenses. The relatively sparse commercialisation of new ideas or research results from the universities or from private or employed inventors is frequently ascribed to the fact that in such communities – and for the individual person as well – there is a lack of business economic and legal insight such as e.g. business development, organisation and management, strategic planning, marketing and patenting.

Several investigations show, however, that in terms of turnover, growth and employment, the so-called “growth stimulating enterprises” are not necessarily based on the most recent knowledge or technology and that, in fact, these enterprises emerge within all sectors (Kjeldsen & Nielsen 2004). The common denominator for these growth locomotives – across sectors and so-called levels of knowledge – may be new ways of doing things, including employee -and management capacity for detecting new possibilities in relation to the development of business goals. In the political body as in the business sector it is, however, still the attitude that the relatively high European welfare level can only be maintained by constantly being in the forefront with respect to the development of new knowledge and with respect to the capacity for commercialising this knowledge into products or services with high contents of knowledge.

As mentioned, the Danish Ministry of Science, Technology and Innovation voices a need for increased university and research institutional focus – partly on the prospects of new business establishment as a means to commercialise research results – and partly on stimulating students to enter into entrepreneurship and a career as self-employed. Thus, the new Danish University Act is expected to prepare the ground for strengthened commercially-oriented and entrepreneurial universities with the external majority of the executive board to “supply the input on the need for knowledge-and competence-building within the area of entrepreneurship” (the Danish Ministry of Science, Technology and Innovation, March 2003). It is required

that this be explicitly stipulated in the development contracts to be entered into by the Ministry and the institutions of higher educations. Any new ministerial regulations on educational matters shall include the concepts of entrepreneurship. The inter-ministerial initiative to launch the Danish Entrepreneurship Academy (IDEA) with participation from universities, the remainder of the educational system and the business sector is aimed at promoting Denmark as a leading country within entrepreneurship and should be considered an important political initiative. The Danish Ministry of Economics and Business Affairs points out, in its contribution at the meeting of the Danish Council for International Development Cooperation, that the educations and supplementary educations available for Danish teaching personnel are insufficient, and that this actually constitutes a barrier for the dissemination and realisation of the enterprising spirit in the Danish society (“Denmark in the Global Economy”, the Danish Ministry of Economics and Business Affairs, January 2006).

In 2004 the Danish Government presented a report comprising 27 concrete suggestions for promoting the EU as a leader within the field of growth and innovation (“Improved Competitiveness in Europe – a prerequisite for growth and employment”, June 2004). The overall message of the report being that Europe, and hence Denmark, will have to demonstrate an increased commitment towards knowledge service, and that this should be realised through an enhanced focus on research, education, innovation, and cooperation between public and private sectors. The report is based on the fact that the EU is lagging behind for instance the US when it comes to adjusting to changes in the competitive situation of the global knowledge economy – a market competing on the capacity for development as much as on the ability to attract new knowledge in order to generate innovation and growth. The EU-universities are considered to be of utmost importance in this process.

As a result of this increase in the political focus on innovation, inventiveness, growth and enterprising, the Danish ministries have elected to substitute the Danish term ‘iværksætter’ with the internationally known and applied concept ‘entrepreneurship’ because it has far more widespread denotations than the Danish term.

Together with several other OECD-countries, the Danish National Agency for Enterprise and Construction has launched an extensive project with the primary objective of developing an index for measuring how selected areas and factors within the so-called “framework conditions” may affect a country’s capacity for generating new businesses and engendering growth in existing. These reviews also point towards the universities as potential

sources of development and growth. The participating countries are attempting to establish a joint foundation for the formulation of a “best practice” with respect to evaluating universities’ capacity for contributing to the establishment of new knowledge-based businesses. The index comprises e.g.: the extent of entrepreneurship education provided by the university, the university’s interaction with stakeholders outside the university, the application of teaching forms specifically designed for the promotion of entrepreneurship (the National Agency for Enterprise and Construction, Appendix 2: “Entrepreneurship Education at Universities – a benchmark study”, July 2004).

1.1. THE PRIMARY OBJECTIVES, METHODS AND EXPECTED RESULTS OF THE PROJECT.

This project is based on reviews of international research results and on case-studies of university communities in and outside Denmark working with entrepreneurship education and research. The project results are put forward in two sub-reports, presenting the results from case-studies in and outside Denmark, and in this main report presenting the development of a framework based on our findings. This is intended as a source of inspiration for the analysis and planning of education and teaching in entrepreneurship in a university community. The project results have been presented at international conferences and constitute the basis of articles in scientific journals and books.

Our case- and literature studies indicate that it takes special learning processes, a special culture, a special focus – together with the establishment of new kinds of associations and relations to a series of internal and external stakeholder-groups – for the universities to live up to the new role they have been politically designated in Denmark and in the rest of Europe. In many cases it will also necessitate the development of different and “new” didactic and pedagogical methods and teaching forms as compared with those traditionally applied in university communities. See e.g. Blenker, Dreisler, Kjeldsen and Færgeman (2004b) for an outlook on this issue, discussed on the basis of case-studies of four European university communities.

The experience yielded suggests that inducing the universities to play their – to many new – role will not be easily accomplished. Further, there are questions such as: Has the role been well-defined? How should the role be filled? What is the potential and what are the problems – in the short and the long term – if the role is filled? What does it entail with respect to

managerial or organisational change at the universities? What will be demanded as to new structures of incentive? What will be the requirements to education and teaching with respect to form and content? It is our goal that this project contributes to further elucidate – but also probe and discuss – these issues and questions.

The project revolves around the following major objectives:

- Our first objective comprises a theoretical and empirical assessment of how to construe the underlying concept of the term “entrepreneurial university”. In this connection we try to determine how the interaction between internal and external factors would presumably influence a university’s development towards a higher degree of entrepreneurial focus. This part of the project might be an inspiration in connection with the development of strategies and managerial models at university, centre –or departmental level.
- Our second objective comprises an organisational and managerial assessment of the extent of special resources, competence and distinct innovative behaviour required from university and staff in order to meet the desire for strengthening the students’ enterprising spirit and enterprise competence. In continuation of this we attempt to investigate whether – and how – education and teaching intended to promote enterprising spirit -and imagination (enterprising behaviour), and subsequently the starting up of own businesses (entrepreneurship), presupposes special forms of didactics and pedagogy.

As already mentioned, it is our hope that the results of this project will 1) be an inspiration for the individual institution of education with entrepreneurship education on the agenda. The project is further expected to 2) contribute to the internationally expanding research in enterprise and entrepreneurship education. Finally, the results would 3) also be applicable at the educational and business political levels in connection with an assessment of both framework conditions as well as concrete initiatives recommendable in order to comply with the objective of involving the research -and educational system in the establishment and development of more knowledge-based firms.

The following section presents a brief review of some experience-based statements and theses deduced from our studies of the four European university communities (see Blenker, Dreisler, Færgemann and Kjeldsen 2004b).

1.2. EXPERIENCE FROM FOUR EUROPEAN UNIVERSITY COMMUNITIES.

As mentioned, the empirical part of the project comprises surveys of university communities outside Denmark – all with several years of experience in entrepreneurship research and teaching. Some of the universities in question have explicitly expressed a vision of developing into a so-called “entrepreneurial university”.

“The entrepreneurial university” idea is based on and contains the triple-helix theory presupposing a university in dynamic interaction with its surroundings – the business sector and the political system in particular. It thus signifies a university community:

- entering into cooperation or alliance with other institutions in order that heterogeneous competences meet
- where learning forms are consciously developed in consideration of objectives and target group
- where practical knowledge is linked with theoretical reflection and professional development
- where personal development and capacity for self-organisation and personal learning are strengthened.

Our aim with the four case-studies was to gain a more profound insight into – and understanding of – the characteristics of these research and teaching communities, including their pedagogical models and learning forms. It is this insight that has inspired the development of our frame of reference which will be elaborated in the following chapters.

Our international studies comprise the following four university communities:

- University of Twente, the Netherlands (in the following abbreviated Twente).
- University of Central England, Birmingham, England (in the following abbreviated UCE).
- Universität Rostock, Germany (in the following abbreviated Rostock).
- Stockholm School of Entrepreneurship, Sweden (in the following abbreviated SSES).

In table 1, the four university communities are compiled with respect to context and application of pedagogical and didactic principles.

Table 1. Four European university communities.

The four university communities				
	TWENTE UNIVERSITY (NL)	ROSTOCK UNIVERSITY (D)	UCE BIRMINGHAM (UK)	SSES (S)
	Technical university	Multifaculty	Multifaculty	Centre
The con- text of the entrepre- neurship education	The entrepreneurial university Faculties of natural sciences and technique Business School	Objective: to become an entrepreneu- rial university Separate centre associated with (ROXI / IBEC)	Business School and/or Centre activities (ERDC) Network partner in: Mercia Institute Of Enterprise 9 universities	Founded by 4 universities/ schools Networks/ shared resource pool Privately financed
Peda- gogical and di- dactic principles and methods	-coaching -short-term scholarships -project jobs -interdiscipli- nary courses -business plan -project-based subjects -student incu- bators	-simulation plays -structured sub- jects -business plans -holistic ap- proach -personal devel- opment -entrepreneurial competence and behaviour	-ideas labora- tory -thesis as busi- ness plan -general courses in eco- nomics -business plan competitions -the network as a market for exchange of courses etc.	-guest teachers international/ global approach -business plan competitions -action, diversity and imagination -panel debates -group work -etc.

In the following we shall present an itemised review of some of the challenges faced by the four European university communities. Challenges and issues constituting an inspirational element in the construction of our frame of reference.

1.2.1. The university's relations to external stakeholders.

- How are the stakeholders in the “triple-helix-model” motivated to seek information about each other for purposes of dialogue?
- How is the basis for establishing and implementing concrete initiative identified and coordinated in the interaction between university, business community and political system?
- How to develop the parties' acceptance of a need for entirely different benchmarking and criteria of success as compared with those ordinarily applied at universities, in businesses and in the public sector?
- Why are some universities more entrepreneurial than others? Should all universities aim at becoming entrepreneurial? What are the characteristics of the entrepreneurial university's developmental process?
- Is political initiative for purposes of strengthening the regional technological and economic development a significant driver and source for a university's commitment to entrepreneurship research and education? (The significance of the university context).

1.2.2. Entrepreneurship teaching –didactics and pedagogy.

- Does entrepreneurship education require a special pedagogy or special didactics? And does this constitute specific requirements to the organisation of the educational community?
- Should entrepreneurship education and teaching take place with special considerations for context?
- How is the so-called multifaculty entrepreneurial university established where entrepreneurship education has a wider behavioural aim than simply that of creating new businesses?
- Does teaching *in* entrepreneurship – as opposed to teaching *about* entrepreneurship – presuppose specific forms of pedagogy and didactics?
- Should entrepreneurship teaching be regarded as a pedagogical process encompassing professional as well as personality developing elements?

- Should development of expedient entrepreneurship educational programmes be based on integrated ideas comprising: objectives, target group and context?
- Should the concept of diversity enter into the planning and implementation of entrepreneurship teaching as a significant pedagogical possibility and challenge?
- Would the high university ratio of specialisation and the frequently lacking interdisciplinary and pedagogical competence constitute a barrier for entrepreneurship teaching at university level?

Studies of the four university communities support our literature-based hypothesis that the development of education and teaching in and not just about entrepreneurship would be most advantageous when carried out as an element of a forceful interaction between institutions of research and education and the business community.

1.3. A FORCEFUL INTERACTION BETWEEN UNIVERSITY AND BUSINESS COMMUNITY.

The various political initiatives referred to in section 1.1 suggest the educational system – including the role of the universities – as a point of departure for establishing a basis for the development of new knowledge-based growth enterprises. International surveys and our studies of university communities in and outside Denmark show that commercialisation of the knowledge developed at universities may be consolidated through a close interaction in the so-called “triple-helix” philosophy:

- The public sector (through the development of long-term framework programmes and the launching of concrete initiatives, national as regional).
- The business sector (through commercialisation of knowledge as patents and products – and through a willingness to contribute with resources and competences in connection with research and educational projects).
- The universities (through the generation of research-based knowledge and the development of student competence – professional as personal).

The necessity for closer relations between the three parties is a recurring trait in several economic and political reports. Thus, two OECD reports –

“The Policy Agenda for Growth”, 2003 and “Beyond the Hype”, 2001 – point out that the drivers for growth and competitive strength rest on a country’s (and its population’s) capacity for thinking in new configurations of the five following so-called growth drivers in society (see box 2).

Box 2.

- **Innovation:** Research and education at universities in interaction with research and business development in the private sector is an important prerequisite for innovation and invention.
- **Entrepreneurship:** New enterprises have increased their share in productivity growth because frequently they are more knowledge-intensive and because they frequently apply new organisational forms and modus operandi.
- **Human resources:** The population of a country should always possess the competence and motivation for carrying out their task in improved and less complicated ways. We need to be better at strengthening our readiness for change and our innovative managerial perceptions. We should incorporate more new learning forms suitable for e.g. the promotion of knowledge-sharing and knowledge-dissemination. We consider this issue of general enterprising drive –and imagination as one of the key elements of this project, and we shall return to this aspect in chapters 2 and 3 in connection with our review of the concept “enterprising behaviour”.
- **Information –and communications technology:** One of the primary sources of development and growth is an incessant creative exploitation of the new possibilities inherent in information –and communications technology. This presupposes a development of population competence and skill for applying new technology in every potential way; and it further presupposes an understanding in businesses of the need to apply new technology in the organisational strategies and processes.
- **Globalisation:** The capacity for thinking and acting globally is considered a mandatory requirement for growth creation as global development will presumably change the global situation of possibilities and welfare within the next few years. We will experience a decisive change in the distribution of work, where countries as China and India together with certain South American and East European countries might “threaten” the welfare of USA and Europe unless we understand the significance of global cooperation and capitalisation of comparative advantages. Albeit of paramount relevance in connection with the development of entrepreneurial competence at Danish universities, this project shall refrain from discussing the issues of globalisation.

Thus, this increased interest in the role and significance of the universities in the socioeconomic development and their contribution to the stimulation of welfare is not a purely Danish phenomenon. It might be said that, in Denmark, we have been inspired by a development already under way in the countries we usually compare with; countries, however, with whom we are also in competition on the global markets. It is therefore necessary that Denmark, too, take a stance in this development (see box 3).

Box 3.

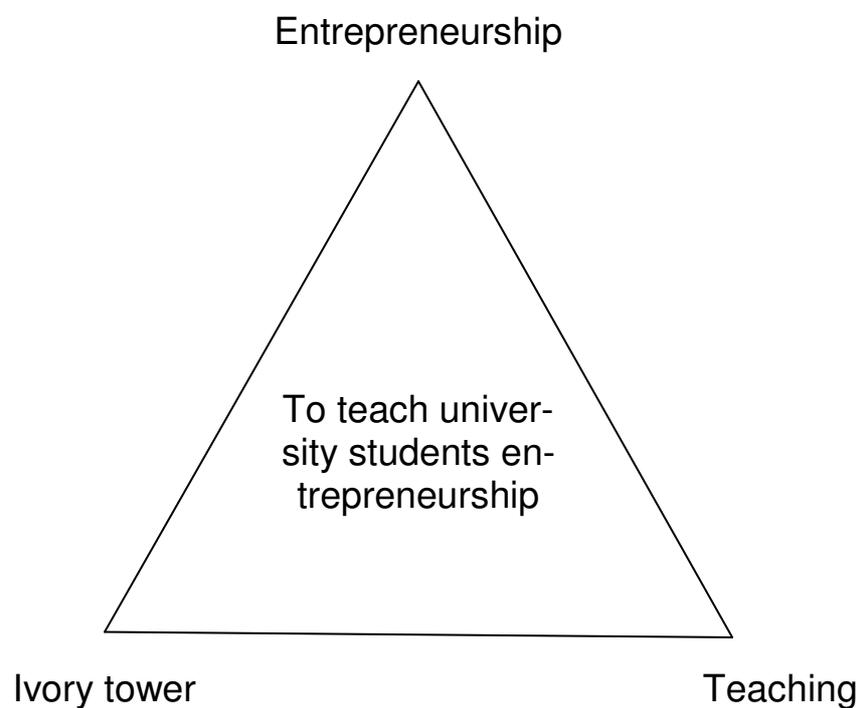
From political quarters there is a conviction that these expectations to the new role of the universities presuppose innovative thinking and a comprehensive organisational and managerial restructuring in research as in university communities – in general and at the individual university. The Commission points out some key issues as potential barriers for this development by raising following questions (Communication from Commission – The role of the universities in the Europe of Knowledge, Brussels 2003):

- How to achieve adequate and sustainable incomes for universities and to ensure that funds are spent most efficiently?
- How to ensure autonomy and professionalism in academic as well as managerial affairs?
- How to concentrate enough resources on excellence, and create the conditions within which universities can attain and develop excellence?
- How to make universities contribute better to local and regional needs and strategies?
- How to establish closer co-operation between universities and enterprises to ensure better dissemination and exploitation of new knowledge in the economy and society at large?

Thus a memorandum from the European Commission states that “Europe needs excellence in its universities, to optimise the processes which underpin the knowledge society and meet the target, set out by the European Council in Lisbon, of becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.” (Communication from Commission – The role of the universities in the Europe of Knowledge, Brussels, 2003). The Commission is targeted towards a continuous follow-up on universities’ compliance with this, to many extended, entrepreneurial role.

As previously explained our studies of four European university communities reveal that the questions cited above constitute some highly essential and well-known issues; and we also found that at many universities the planning of entrepreneurship education and teaching is still performed in a way and in a context which we shall refer to as “the traditional perception of entrepreneurship teaching at university level” – see figure 1.

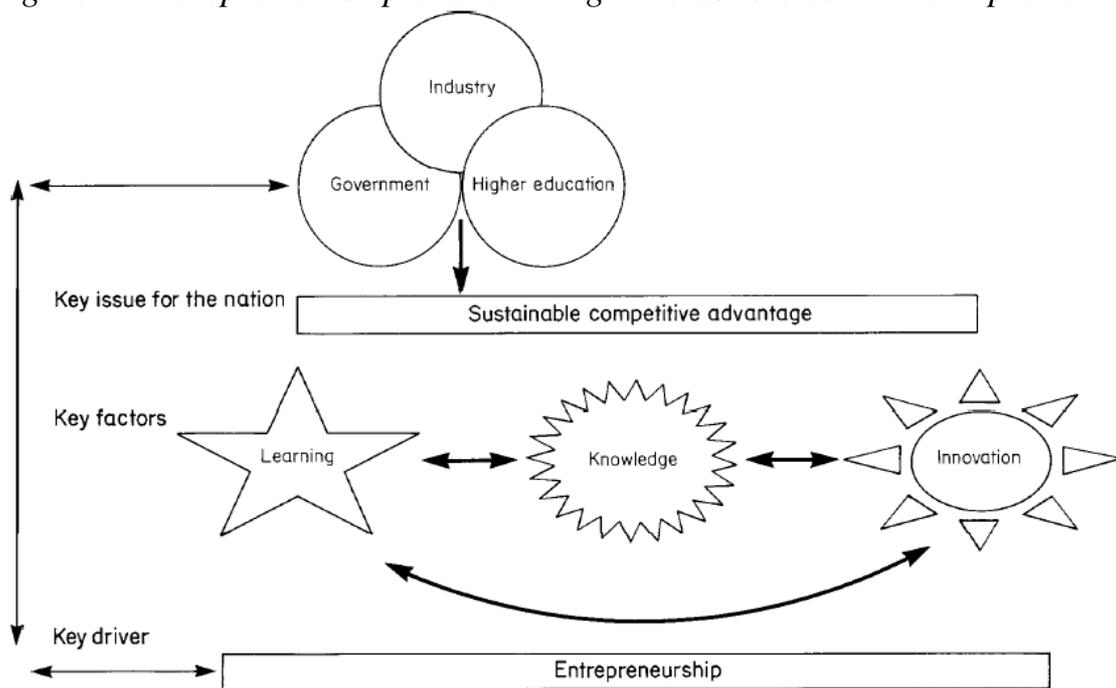
Figure 1. The traditional perception of entrepreneurship teaching at universities.



The approach to – and handling of – entrepreneurship teaching, suggested in the figure, neither seems capable of sustaining the marked political desire for an increased active role on behalf of the universities with respect to promoting societal growth through cooperation and participation in the development of patents or new products, nor with respect to the establishment of new businesses or innovative development of existing. The realisation of these objectives would, as already mentioned, presuppose a closer interaction between the private and public sector and the system of higher educations. There is much to suggest that such an interaction might lend a country, a region, all three stakeholders some “sustainable competitive advantages” on an international scale. See below overview of the connections between a series of key concepts as drivers in this development (“Entrepre-

neurship and learning: the double act in the triple helix”, Matley & Mitra). The key concept in this developmental process being the creation of a framework for an innovative and entrepreneurial society with entrepreneurial individuals who – through a constant learning process – produce knowledge which can be exchanged into innovation. The three central concepts at personal, business and societal levels are learning, knowledge production/dissemination and innovation. The Driver as such is also considered to be entrepreneurship.

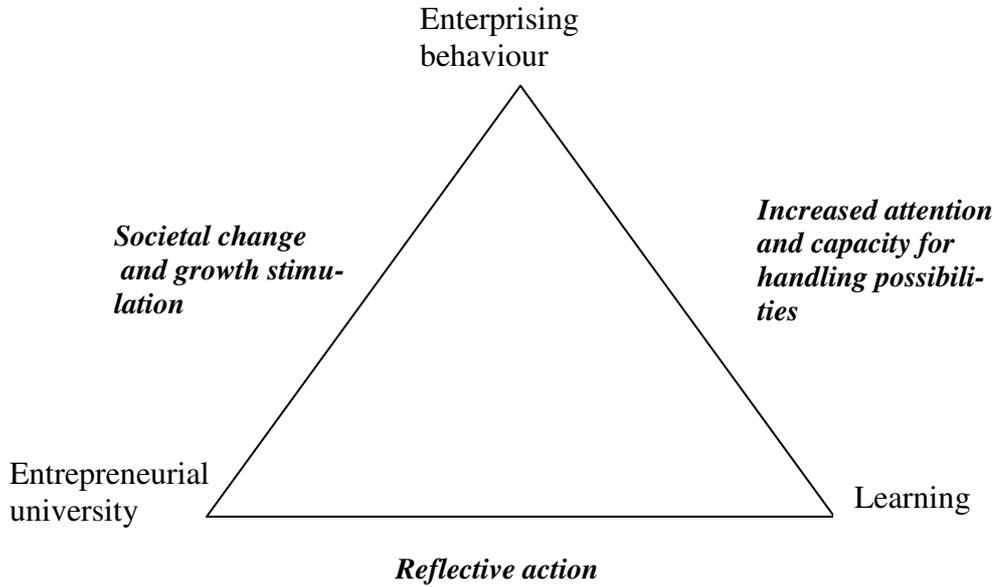
Figure 2. *Entrepreneurship and learning: The double act in the triple helix.*



Source: Matlay & Mitra (2002).

The institutions of higher education and the universities in particular, are thus intended to play a highly central part in this innovative and entrepreneurial process – in society at large and in the individual region. This has resulted in a need to apply a new perspective on the role of the universities and on the learning objectives the universities should comply with. This also entails new requirements to the implementation of the most advantageous learning processes. We have elected to simplify this in the figure below which constitutes the next stage in the development of our framework.

Figure 3. *The new perspective on the role of the universities, on learning and learning objectives.*



Thus, entrepreneurship has been declared the most significant driver in the future development of material societal welfare, and perhaps of immaterial as well. Businesses, organisations and the individual person should be motivated for – and develop competence in – perceiving new possibilities through reflective action and hence participate in the creation of change and growth in society. This capacity and inclination for change and innovation is thus conceived as an important human trait. A trait which in international research has come to be known as “enterprising behaviour”. We shall subsequently return to this key concept. Similarly, “the entrepreneurial university” and “learning” are concepts which shall be discussed in the next chapters.

1.4. ENTREPRENEURSHIP EDUCATION – KEY INTERPRETATIONS, CONCEPTS AND THEORIES.

A survey of several research contributions is of little avail in the explication of how the concepts entrepreneur and entrepreneurship should be construed. In addition to this lacking clarification, there are also highly differing opinions as to the research form needed: either for purposes of a comprehension of the background for enterprising behaviour – or for purposes of developing suitable normative theories and models applicable for the entrepreneur in his implementation of an entrepreneurial decision and action. We shall return to these key issues in chapter 3. Thus, after thirty

years of intensive study of the phenomenon, the research community still spends much energy on the definition of concepts as entrepreneurship and enterprising behaviour. This only goes to show the complexity of the area as well as the process, and that this could and should be examined from several different frames of understanding. This multifarious approach appears to be a prerequisite where the desire is to include both environmental factors and personal relations in potential and established entrepreneurs and their network – i.e. where there is a desire to clarify and understand the motivation for the implementation of an entrepreneurial action.

Box 4.

This inadequacy pertaining to the definition of the entrepreneurship concept also entails a frequent misapplication of resources allocated commercial and educational initiative aimed at promoting entrepreneurship.

This lacking clarity with respect to the concepts entrepreneurship and entrepreneurial competence has also resulted in some confusion within the subject field and theoretical domain of entrepreneurship education. And, subsequently, this has resulted in many and varied bids for what should be taught, and how teaching and learning processes should proceed. The importance for researchers to try to establish a better understanding of the different correlations between entrepreneurial actions and learning processes is a frequently stressed issue (Garavan 1994.1: 4; Gibb 2002: 238; Kyrö & Carrier 2005; Bechard & Toulouse 1998). We shall discuss learning and learning processes in chapter 4 where, on the basis of various pedagogical and didactic theories, we shall attempt to suggest some feasible means to the development of entrepreneurship education -and teaching at university level.

Johannisson & Lundberg (2002) thus stress the access to professional and social networks as aspects of paramount importance in the entrepreneur's implementation of an entrepreneurial action: "Entrepreneurship is a social process, usually initiated by an alert individual who however soon enough organises a team out of her personal network to enact the emergent opportunity. That opportunity creation thus is a collective effort meaning that part of the environment is demarcated, bracketed, and sense-made to subsequently materialise as a venture. The venture is an outcome of a truly interactive learning process where both the outcome and the process itself cannot be stated beforehand. Only by recognising venturing, as a collective learning process where venture and context are co-created, will the would-be entrepreneur, i.e. the initiator of the process, gain the self-confidence needed to maintain the process."

Yet, the key issue – whether entrepreneurship can at all be learned through education and teaching – still remains. The conclusion is that yes, it is to some extent feasible, but also that it presupposes a special kind of didactics and pedagogy focused on the development of academic as well as personal competence.

Box 5.

The capacity for identifying a new opportunity before anyone else is perceived to be a central aspect of entrepreneurial capacity and competence (Schumpeter 1934; Kirzner 1973; Abell 1980). It presupposes a kind of readiness (alertness) coupled with an urge to exploit the possibilities that others may perhaps not detect – or have not yet seen. The entrepreneur sees the possibility through “the strategic windows” for the short period of time they remain open (Kirzner 1973). Studies of the literature about the learning process – “entrepreneurship education” as such – show that research in this area is mainly descriptive and that existing advice and recommendations do not constitute a clear pattern. We shall subject this issue to an in-depth examination in chapters 3 and 4.

” Thus, Koch (2003: 638) states in relation to Theory of Entrepreneurship Education: “Any reflection on the teachability and learnability of entrepreneurial expertise first demands an understanding of the teaching and learning subjects. Here the focus is on subjects who undertake something innovative as intrapreneurs or entrepreneurs in order to generate added value through change.

Some researchers point out the need for a more theoretically-based teaching in entrepreneurship (Fiet 2000a). They suggest that there should be an attempt to establish a set of standards defining central concepts and frames of understanding in order to facilitate procedures of building superstructures onto the existing research-based knowledge. That is: to produce accumulated knowledge which can be generalised from conventional academic criteria. Other scientific contributions practically advocate the opposite angle, in arguing that identifying a business opportunity and starting up a new company is so unique a situation and an issue where theorised knowledge cannot be of much avail neither to the entrepreneur nor to the person responsible for teaching the entrepreneur or the students. Research-based general knowledge and application of generic theories and models may even constitute an obstacle to the entrepreneur in his capitalisation of his quite unique capacity for identifying new opportunities not perceived by others.

Our case-studies confirm our impression that “the truth” is not an “either – or”, and that theory- and experience-based knowledge as models and tools

may be useful in connection with business start-up and development. We also believe to be able to conclude that profound research-based insight into the influential factor of an individual's personal traits, which may affect the capacity for implementing an entrepreneurial action, could be of substantial value in the planning of education and teaching in and not just about entrepreneurship.

The researcher and teacher may also choose to perceive entrepreneurship as a kind of exact science based on a series of economic and socioeconomic theory formations (Science). Or he may choose to see entrepreneurship as a kind of "art" (art versus science), where an entrepreneurial action shares many distinct traits with art forms and hence should be understood as some kind of "economic art form" Box 6:

Box 6.

Application of the "art" perspective elevates creative capacity to a key element, and it then becomes relevant to question whether the potential entrepreneur would at all need a theoretical foundation for his practical learning process. Likewise, it may be argued that "conventional" teaching methodology would be inapplicable where the objective is creative competences, skills and behaviour.

One objective of theoretical inclusion could be that of providing prospective entrepreneurs with an outlook and with concrete tools for strengthening professional competence and skills in relation to the identification of business opportunities and also for evaluation thereof in a "realistic" and relevant perspective. In this connection inspiration may be obtained from socioeconomics, business economics, the Austrian School, innovation theory etc. If not reflected upon, however, the microeconomic paradigm and particularly the management theory may prove decidedly counterproductive inspiration with respect to the entrepreneur's way of thinking and acting. Thus Gibb (2002) rather bombastically argues that entrepreneurial competence cannot be promoted at business schools and that perhaps this community might even destroy it. This, for instance, in connection with the capacity for detecting new opportunities, for tackling risk

Thus Jack & Anderson (1999: 111) argues: "Moving to consider how these aspects can be taught, the science of management/ SME management is seen as teachable within a conventional pedagogic paradigm. However the art is seen as more problematic, it is experientia, founded in innovation and novelty but based on heuristic practice. As academics we cannot replicate the experiences of successful entrepreneurs, but we can use their experiences to develop theory and this theory will help to bridge the abyss between the art and the science of entrepreneurship".

and uncertainty or for having a –strong belief in one’s own ability to influence the surroundings (internal beliefs of control).

Another objective of this project is precisely the desire on our part to contribute to the establishment of a linkage between entrepreneurship research and the research focused on learning – comprising theoretical didactics, pedagogy and the science of teaching. This association has become increasingly widespread in journals and at international conferences where, previously, the two research domains – due to different research attitudes – have not been mutually beneficial. Being a fairly novel research area there are, as we have suggested, many different opinions as to how entrepreneurship teaching could and should be practiced. Apart from the academic differences we also register differences of a geographical nature with regard to the application of the concepts entrepreneurship education and enterprise education. In North American usage “entrepreneurship education” is the preferred term, whereas the concept “enterprise education” is prevalent in Great Britain and Ireland (Garavan & O’Cinneide 1994.1: 4). This is not solely a matter of geographical and linguistic nuances – it is also a matter of meaning.

Entrepreneurship education is primarily aimed at stimulating entrepreneurship in the sense of business start-up and ownership – or at developing competence for increased possibility seeking behaviour within existing firms (Intrapreneurship). In comparison, the purpose and aim of education in enterprising behaviour are more wide-ranging since this is more generally focused on the development of people with inclination and competence for venture, people exhibiting enterprising behaviour. Thus, enterprising behaviour may manifest itself in a multitude of different contexts, organisations and job specifications – not just in connection with business start-up. Since organisations may be designed to either limit, prevent or promote enterprising behaviour, it becomes important that the employee learn how to establish structures, networks and alliances that will be advantageous to the realisation of enterprising behaviour (Gibb 2002). This point of view may be compared with the previously mentioned OECD-report where one of the five drivers for societal growth is precisely the development of enterprising behaviour and drive in the public in general – and not just in relation to the establishment of own businesses.

Another central aspect is the question whether entrepreneurship and development of enterprising behaviour could or should be seen as a collective or as an individual phenomenon (Johannisson & Lundberg 2002; Laukkanen 1998). The entrepreneurial process may well be instigated by an attentive individual with special qualities (alertness); but in connection with knowl-

edge-based businesses in particular, the entrepreneur will soon have to draw on others from his personal and professional network in order to act on the given opportunity. Thus, the entrepreneurial decision-making process may be perceived as a series of more or less conscious actions with the entrepreneur utilising his professional and personal network while establishing new networks in the process (Johannisson & Lundberg 2002). It therefore seems relevant to ask whether “conventional” entrepreneurship teaching is inadequately focused on personality-developing activities consciously directed at developing increased degrees of competence synergy through the formation of professional and social networks. Many knowledge-based firms are established when two or three persons with complementary competences start up the business together. It might perhaps even be hypothesised that many knowledge-based businesses are never established – or never attain growth – exactly because the entrepreneur lacks the capacity for fusing the necessary complementary competences through the establishment of a professional and personal network.

Our literature studies suggest that it may be difficult to predict which personal and academic competences to develop in order to succeed in filling the entrepreneur role in the individual, concrete situation. This problem also presents an obstacle in the formulation of clear-cut purposes and objectives for entrepreneurship education and teaching. We nevertheless believe – through our case- and literature studies – to have found support for the following generic statements concerning the planning of educational programmes and teaching processes aimed at developing students’ entrepreneurial competence and skill:

- In general, a conscious linkage of purposes, objectives and target group should be the point of departure for the planning and implementation of learning processes, and this cohesion is considered specifically important in connection with entrepreneurship teaching. It is of paramount importance for the planning and implementation of education and teaching that there is a definite awareness as to purpose and objective – whether it be focused on teaching about or in entrepreneurship. The choice will be dependent on the target group in question.
- Planners of education and teaching in entrepreneurship may adopt an art perspective as well as a science perspective. The choice of perspective – science and/or art – will be related to the issue of purpose and objective: whether this be teaching about or in entrepreneurship.

- Whether the purpose and objective of the teaching be teaching about or in entrepreneurship this should be reflected in the choice of didactic perspective and foundation (the theoretical and methodological foundation for the educational programme may e.g. be based on management and/or entrepreneurial theory).
- Whether the purpose and objective of the teaching be teaching about or in entrepreneurship this should be reflected in the choice of pedagogical methodology (planning of the learning processes – teaching and/or learning).
- The purpose and objective should exert an influence on whether the teaching would be most suitable for auditorium or practice (i.e. the planning of the university context – from “Ivory tower” to “Entrepreneurial university”).
- The purpose, objective and target group should exert an influence on whether the teaching should be planned for purposes of supporting individual and collective teaching processes alike (from a focus on the student’s individual academic competence to further encompass development of the individual’s social, network-oriented and communicative competence).

These statements constitute the basis for the continued development of our frame of reference. This frame of reference rests on the recognition of a need for developing new areas of focus and – not least – the need for an enhanced consciousness with respect to a series of interrelated conditions pertaining to the strategic thinking in entrepreneurship education and teaching at university level.

In the exposition of the frame of reference dealt with in the next section, we intend to demonstrate the basis for our arguments through a presentation of extracts from our literature studies of authentic educational programmes from European university communities – all characterised by being consciously preoccupied with entrepreneurship education from an academic as well as a pedagogical perspective. In chapters 2, 3 and 4 the constituents of the frame of reference will be extended and analysed separately.

1.5. EXPERIENCES FROM EUROPEAN EDUCATIONAL PROGRAMMES.

Our review of various entrepreneurship education- and teaching-programmes at university level clearly demonstrates that the indecision as to what entrepreneurship actually signifies may give rise to problems with

respect to the formulation of the principal objectives of teaching or learning processes and, further, with respect to the concrete learning objectives of the teaching. In many cases there is no explicit formulation of objectives (Laukkanen 1998: 7). Several authors further conclude that research in entrepreneurship education is limited and that there is a need for increased research within this field: “Research on entrepreneurship education and training is sparse. There is a lack of accepted paradigms or theories of entrepreneurship education and training” (Laukkanen 1998: 4).

Based on our literature study it is, however, feasible to list some common traits relative to the formulation of purposes and objectives of entrepreneurship teaching (Kyrö & Carrier 2005; Bechard & Toulouse 1998). Some of these key areas will be treated in the following and, together with our case-studies, they will be an inspirational contribution to the development of the content of our completed frame of reference, where target group, context, purpose and learning objective enter as central and cohesive areas of decision. Thus, Jonsson & Jonsson (2002) argue that the development of following competences are central to the entrepreneur, and hence they are included as didactic and pedagogical key objectives of entrepreneurship educational programmes at University of Växjö, Sweden:

- The development of communication abilities
- The development of analytic abilities
- The development of the facility in problem solving processes
- The development of social interaction abilities
- The development of global perspective and awareness

As in Sweden, the Irish have several years’ experience in research and, especially, teaching in entrepreneurship. The reason for this – or the result of this – is that many universities and business schools work in close cooperation with the business community see box 7 – the Limerick model.

Box 7.

Thus Fleming (1999) states in relation to University of Limerick's educational programmes in enterprising behaviour:

"Knowledge and enterprising skills are the key to innovation led development and much modern industry in Ireland has emerged from combinations of those two factors. As a result of the increased awareness of the benefits of enterprising skills, enterprise education is being widely introduced into higher education institutions in Ireland. Its major objective is to help develop enterprising people and to inculcate an attitude of self-reliance through the process of learning. Enterprise demands imagination, lateral thinking, flexibility and energy. Preparation and cultivation of these attributes are occurring in the higher education system" (Fleming 1999: 405).

This educational programme displays a conscious effort to develop enterprising skills and to stimulate student enterprising behaviour. The supreme objective is furthermore formulated in concrete teaching objectives governing the choice of content as well as the choice of pedagogical method in the Limerick model:

The objectives of the Limerick model are (Fleming 1999: 406):

- To provide participants with an insight into the role of entrepreneur and entrepreneurial process;
- To develop the core skills and attributes necessary for entrepreneurship, such as creative problem-solving, diagnostic skills, communication and projects to induce enterprising behaviour;
- To focus participants' business vision so that they think strategically and can generate and manage business opportunities;
- To assist personal development through freedom and opportunity to practise entrepreneurship.

In conclusion of an extensive survey of six different programmes at six different universities, it is the assessment of Garavan and O'Conneide (1994.1: 4) that these programmes differ widely in practically every respect, that a generic model – a tailor-made solution – for every institution has yet to be developed, and that this will probably never happen. On this background, the two researchers conclude that there is a need for trials and research to harvest and underpin experience with various types of pedagogical models for developing enterprising behaviour and entrepreneurship. Nevertheless, the two researchers *were* able to deduce an array of purposes and objectives on the basis of their investigation – all more or less explicitly contained in most of the six programmes reviewed (Garavan & O'Conneide 1994.1: 5), see box 8.

Garavan & O’Cinneide (1994.2) further conclude that educational programmes developed for purposes of developing student motivation and competence for a way of life or for a labour market characterised by enterprising behaviour imposes considerable demands on teachers: “The most important conclusions that may be made with respect to the design of such programmes are: focus on specific target population, the need for balance in terms of learning strategies, and programme facilitators who has capacity to adopt a multiplicity of roles.” (Garavan & O’Cinneide 1994.2: 20).

A recurring theme in the various descriptions of entrepreneurship education is the emphasis on interaction between university and business community, and it is pointed out that, as a rule, this interaction presupposes a substantial adjustment process at many traditional universities. This fully concurs with our case-studies in and outside Denmark.

Also Laukkanen (2000: 27-29) draws attention to this problem in his development of a model which he deems to be an appropriate framework for universities who consider regional development in the shape of knowledge-exchange between university and business community a prime objective. The encouragement for students to develop ideas for new businesses or to generate ideas for innovative development of existing businesses is a central aspect of this model. The model, entitled “High level entrepreneurship education” or, alternatively, the BGS-model – BGS being an abbreviation of “Business Generating Strategy” – is applied at University of Kuopio. This educational and teaching model is extremely detailed ranging from the principal objective to an exposition of the decisions underpinning education and teaching forms.

Box 8.

”The following are the most commonly cited objectives of entrepreneurship education and training programmes:

- To acquire knowledge germane to entrepreneurship
- To acquire skills in the use of techniques, in the analysis of business situations, and in synthesis of action plans
- To identify and stimulate entrepreneurial drive, talent and skills
- To undo the risk-averse bias of many analytical techniques
- To develop empathy and support for all unique aspects of entrepreneurship
- To devise attitudes towards change
- To encourage new starts-ups and other entrepreneurial ventures.”

Box 9.

Like other surveys, Laukkanen (2000: 26) concludes that implementation of an “entrepreneurial education model” is no mean feat, as it requires substantial changes in the university’s traditional outlook on its role. It presupposes that the university as institution both can and will exhibit entrepreneurial behaviour:

“Universities are learning to cultivate practices and images of pragmatism and responsiveness vis-à-vis societal concerns, at the same time without compromising their traditional values of basic research, independence or objectivity” (Laukkanen 2000: 26). “Whatever the manifestation of an entrepreneurial education, different stances seem to exist about it. For the most conservative members of the academic community, the very concept may be at least controversial, even dubious.”

(Laukkanen 2000: 27)

Our case-studies and our personal experience with the Danish university system support Laukkanen’s findings as to examples of barriers for the development of entrepreneurial attitudes in conventional university systems.

Laukkanen (2000: 27): Possible friction issues are, for example:

- generic humanistic education versus contextualized professional training
- focus on functional specialization versus building generalist or pragmatic competences
- analytic or decision-support orientation versus decision-making, personal involvement, social action
- academic objective detachment versus commitment to real-life business objectives
- ideals of equality versus acceptance of relative, occasional inequality

One prerequisite for a strengthening of entrepreneurship education at university level is that these barriers be broken down. That is the reason why this project has elected to place a relatively high focus on the aspect of context – on the optimal conditions for entrepreneurship education and teaching.

On the basis of our findings from literature and case-studies we are in complete agreement with Gibb (2002: 238) when he – on the basis of his literature studies – designates following areas as needing increased attention:

- Increased focus on the entrepreneurial concept as such – and an explication of what this concept signifies.
- Increased focus on the sparse academic acceptance of pursuing entrepreneurship matters.
- Increased acknowledgement that entrepreneurs do not constitute a homogeneous group.
- Increased focus on the necessity for organising knowledge about pedagogical methods with respect to entrepreneurship education.
- Increased focus on teacher competence (teaching/learning levels).
- Increased acknowledgement of the necessity to formulate objectives, objective criteria and methods of measurement for entrepreneurship teaching.
- Increased acknowledgement of the fact that many universities operate as no-entrepreneurial institutions.
- Increased backing and support from relevant stakeholders in the community.

There is a broad consensus in the conclusions of these investigations. Yet, we believe to have observed that they tend to overlook one aspect, viz. the universities' inclination to and capacity for inventiveness and innovation – at institutional top-level. We also believe to be able to conclude that, apparently, the philosophy and theory-formation playing a central part in the development of entrepreneur theory – as represented by the Austrian School and the Schumpeter philosophy – has not constituted any significant inspiration for the investigations. A unification of precisely these two elements might be viewed as pointers towards the development of a new paradigm for entrepreneurial learning (enterprising education). A paradigm which might merit from a focus on the development of management forms and learning communities permitting “creative destruction, new ways of doing things and new combinations of knowledge” (Schumpeter 1934).

This approach to the entrepreneurial university as a framework for developing entrepreneurship education and teaching will be discussed in chapters 2 and 3 of this report. Our case-studies of the four European universities clearly substantiate the significance of adopting this perspective: albeit on different levels and on the basis of different models, the communities we investigated all aim at becoming “entrepreneurial universities” and with focus on entrepreneurship research and teaching.

A consideration of the university system – in Denmark and internationally – reveals the “old” classical university as being characterised by stability, continuity and internal academic specialisation rather than by “creative destruction” or a high degree of inter-disciplinary programmes. Depending on purpose and objective this conservationist attitude and high degree of specialisation at universities may have merits as well as shortcomings with respect to the generation and mediation of knowledge. If the aim is to establish a basis for inventiveness and innovation there will frequently be a series of barriers between individual faculties – barriers that may be obstacles where the objective is that of strengthening enterprising behaviour and securing entrepreneurial action and behaviour in the system as such, in teaching staff and in the student body.

Taking another perspective – the aspect of teaching and learning per se – evidence reveals a majority of universities as having objectives of competence and learning other than those aimed at strengthening the individual’s motivation and talent for the performance of entrepreneurial processes and actions, see box 10.

Box 10.

With respect to traditional university pedagogy and didactics Jonsson & Jonsson (2002) state that:

”In traditional forms of learning the learning process usually takes its starting point in general abstractions, theories and principles. The student’s task is then to use these general abstractions in concrete situations. In an entrepreneurial learning – an informed way of learning - the learning process mostly reverses, that is the learning process mostly starts with questions raised by the students about actual situations and problems”.

Focusing on economics and management, this education is, according to Jack & Anderson (1999: 112), characterised by:

”Traditional management education is positivistic, yet, entrepreneurship is anti-positivistic and entrepreneurial knowledge may be soft and personal. Furthermore new business creation must also be inductive requiring leaps of perception, and the ability to see things in a different way. Thus we see the limitations of the science of management education in dealing with the unknown ability of entrepreneurship.”

This section has reported some experiences gained at a series of universities where there has been a development of various entrepreneurship educations. The following section will present a brief summary of some central areas for inclusion in the further development of our frame of reference.

1.6. FOUNDATION FOR THE FURTHER DEVELOPMENT OF A FRAME OF REFERENCE.

Our empirical and theory-based studies show that teaching aimed at developing entrepreneurial competence in students will seldom be stimulated in the existing university system or by application of conventional teaching forms. Likewise, there are indications that the traditional management approach lectured at most business schools neither has the content nor apply the pedagogy necessary for stimulating enterprising behaviour. On the contrary, there is a widespread agreement that this approach may indeed present an obstacle for the development of such competence and behaviour. Business schools in particular are traditionally highly focused on the development of analytical competence and skills. Frequently, attitudes and assumptions vis-à-vis decision-making uphold the idea that sufficient collection of information will facilitate the performance of rational decisions and rational economic choice from various options – concluding with assessments of uncertainty, reversibility and risk. In cases where this basically positivistic philosophy and method is applied a tad too unilaterally and unreflectively it might have an averse effect on motivation and talent for thinking and acting innovatively and entrepreneurially. As a rule, teaching at university level is structured in such a way that the knowledge acquired by the students is generic rather than contextualised. Most educational activities are to a great extent rooted in university and business school traditions of mediating function specialised skills that can be generalised. Predominant teaching conventions at university level further spring from a perception of mankind as an objective, rationally thinking decision-maker. In this connection it may be assumed that the knowledge with respect to e.g. basic business -and socioeconomics and legal matters necessary for the entrepreneur is “relatively easily” mediated in the classroom. Probably, some skills – such as marketing and resource provision – are in part learnable from conventional teaching. Other skills – in particular competences as e.g. the capacity for identifying new opportunities, management of change processes and networking – are not so easily taught in conventional ways.

A highly simplified interpretation of many university educations within the areas of the natural sciences and, to some extent, the social sciences as well, are traditionally aimed at creating insight and understanding based on:

- the general

- the functionally specialised
- the objectively rational.

Whereas an entrepreneurial action is often characterised by:

- being unique
- being integrating
- being subjective and contextual

This gives rise to following questions with respect to certain university educations:

- Are certain university educations – perhaps especially economic and technical educations – counterproductive to the establishment of innovation and entrepreneurship?
- Are we educating people with proficiency in maintaining status quo, people who do not develop their competence to act as intrapreneurs and change agents in institutionalised businesses and organisations?

There are no unequivocal answers to these questions. In certain cases the answer may, however, tend towards a – yes? Subsequently, this gives rise to a central question as to how benchmarking and incentive can and will be introduced with respect to “performance ratings” of the universities’ new role in society as explicitly value creating. Another question is whether the universities are entrepreneurial enough to be able to conform to any new kinds of short- or long-term purposes and objectives proposed by various target groups in the community. Filling this, to many universities quite unfamiliar, role will – as mentioned – entail entirely different requirements to university self-knowledge, to organisational and incentive structures as well as to didactics and pedagogy.

As previously mentioned, this project is aimed at providing clarification and problem formulation with respect to these matters. This undertaking will further explore the concepts and relations contained in the principal frame of reference presented in this chapter.

1.7. ENTREPRENEURSHIP EDUCATION AT DANISH UNIVERSITIES?

When comparing Denmark with the other European countries there is much to suggest that institutions of higher education in Denmark have played a relatively minor part with regard to stimulating or developing competence

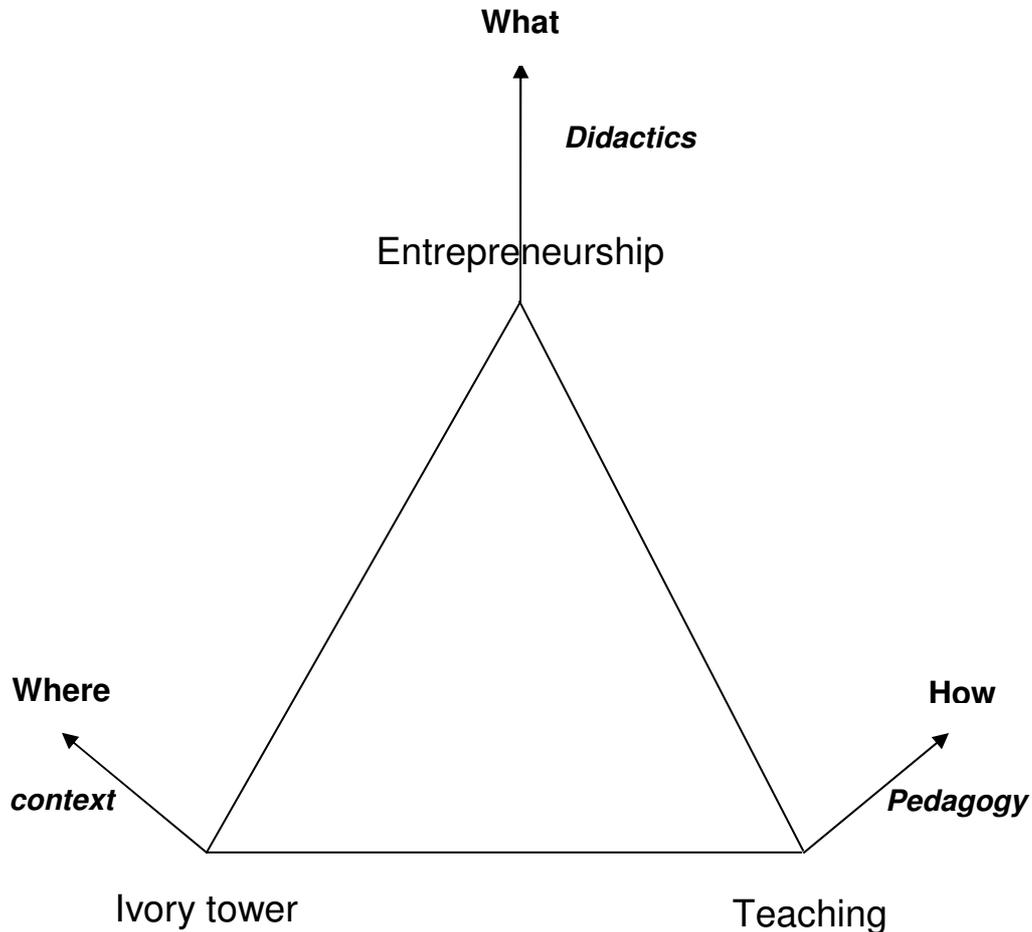
for own business start-up. Thus the Global Entrepreneurship Monitor – Danish National Report (2002: 13) states that “the abyss between research institutions and business community is far too deep in Denmark”. The GEM-report’s main criticism towards the Danish educational system is based on the fact that Denmark – like most other countries participating in the survey – educates for employment rather than for self-employment. The GEM-report (2002: 14) further concludes that, among the 37 participating countries, Denmark hits rock bottom in a survey of how culture and social norms may be conducive to enterprising behaviour (GEM 2002: 15):

- Demand that university management has business understanding and experience.
- Be more commercially focused.
- Encourage more open teaching – invite industry to take part.
- Evaluate co-operation with industry positively.
- Integrate increased commercialisation through corporate venturing.

A recurring trait of the recommendations is the underpinning of the importance of increased interaction between research -and educational institutions on the one side and the surrounding society – comprising the business and public sector – on the other. For the past two to three years, however, especially business schools and younger universities have demonstrated a focus on research and teaching in entrepreneurship. And the Global Entrepreneurship Monitor – Denmark (2003: 21) concludes on the basis of a series of expert statements that the transfer of research and development results between universities and business life has entered a positive phase. It is, however, pointed out that an even closer dialogue is called for and that the public body is by far too passive with respect to the creation of optimal framework conditions. Another significant barrier referred to is that “researchers lack education and experience in cooperating with the business sector”.

We can conclude that – internationally as now in Denmark too – there has been a tremendous interest in a clarification of as well the present activity level of the higher educational system as of future possibilities for entrepreneurship teaching and research. We can further conclude that there is still a significant need for research-based understanding combining entrepreneur-theoretical insight with insight into didactics and pedagogy. Our contribution is a further development of our frame of reference.

Figure 4. A cohesive frame of reference for the development of entrepreneur education at universities.



In the following three chapters we shall elaborate on and further develop our frame of reference for purposes of elucidating the questions posed in the figure above – Where?, What? and How?

The contextual interaction between universities, business sector and political system provides the basis for growth and innovation. The question *Where* exploring the new context and the new role of the universities will be treated in chapter 2 – “The Contextual Challenges”.

The development of students’ entrepreneurial competence presupposes development and renewal of both academic content and theoretical foundations in entrepreneurship teaching. The question *What* and the didactic challenges engendered by teaching in and for enterprising behaviour will be dealt with in chapter 3 – “The Didactic Challenges”.

Teaching in and for inventiveness and enterprising behaviour and not just about entrepreneurship presupposes pedagogical models different from those normally applied at universities. The question *How* comprises the development of appropriate teaching forms in entrepreneurship education and this will be discussed in chapter 4 – “The Pedagogical Challenges”.

Chapter 5 incorporates the aggregate of our conclusions, perspectives and recommendations relative to the challenges and possibilities faced by the university, the researcher or teacher electing to live up to the expectations inherent in the new role of the universities.

CHAPTER 2.

THE CONTEXTUAL CHALLENGES.

There are many dimensions to the development of entrepreneurship education at university level, e.g. drawing up new course descriptions or revising the mix of the course subject portfolio. However, it soon becomes very obvious that such development requires a good deal more than just looking into the specific course content. The practice born out of our own experiences and the empirical studies which is included in this report, and the rapidly growing body of literature on education and teaching in innovation and entrepreneurship all indicate that in this particular field the demands to be met differ greatly from those of other developmental teaching and implementation of education. By exploring in depth the frames that have to be changed, some fundamental conditions for the future of the universities become evident, for them to become part of the development known as the “global knowledge economy”.

This chapter will attempt to take bearings of the exogenous conditions for the role of the universities in the knowledge economy, and in particular how to interpret these conditions for the future of entrepreneurship education, and how to evaluate their effect on internal structures and processes; we will also take a look at the role of the teacher. Our point of departure is, in accordance with the empirical experiences, that teaching entrepreneurship poses huge challenges to the context in which it takes place.

In the introductory chapter we have stressed the interaction between university, business community and public authorities as an important part of the preconditions for a society in change. These interactions have become known as the “Triple Helix” and imply, among other things, the establishment of networks and hybrid organisations to further innovation and improve competitiveness. This is our background for an understanding of and a framework for the development of entrepreneurship in the university sector.

Several reports support this development, the discussion entails that the classic “seeking after truth” university is being challenged at this time by a new type of university that does not regard knowledge in the same absolute sense as the classic and it enters into close innovative learning circuits with external partners, professor T. Bager says, (Christensen & Poulfelt, 2005)

and he continues and mentions that it is essentially the younger universities that are moving in the direction of what one could call the “network-university” in which research is targeted specific demands, and where funding is the responsibility of both the private and the public sector, and the emphasis is on both single and multi-disciplinarity. This comment is a reaction to the GEM report (Global Entrepreneurship Monitor, 2003), which shows that since the last GEM report in 2002 there has been a decline in the perception of the scope of cooperation and knowledge-sharing between universities and industry.

For the same reason but within a more direct prescription for what is needed was given in an article in the Danish economic weekly *Mandag Morgen**, saying that “Danish universities should copy the MIT model”. The director of the MIT Entrepreneurship Centre, Kenneth Morse, says that “as a result of the MIT spirit, we take a both visionary, practical and pragmatic approach to innovation and entrepreneurship”, and he continues: “Inventing brilliant new technology won’t do if it is merely locked up in the ivory tower. The job isn’t done until the technology invented has been transformed into global products and sales”.

The statements above are examples of the set of problems illustrated by the concept the “Triple Helix”. In both cases, the point is that the concept of entrepreneurship is linked to the ongoing discussion about which role universities are supposed to play in a future dynamic, innovative knowledge society, where change is based on knowledge produced and disseminated in close interaction between universities and society, and with political power and support as the driving force, by providing the necessary framework conditions.

The same set of problems are sought illustrated in the term “the entrepreneurial university”. This concept denotes an institution in close contact with its surroundings. The starting point was, however, different from the “Triple Helix” thinking, as it was originally just a concept introduced to describe well-known innovative universities, e.g. Stanford in the USA, which had to establish contact with the “market” after the Second World War, in order to survive. The concept “the entrepreneurial university” has also been introduced in the European debate, where discussions about its implementation, however, have consequences implying far more drastic changes than in an American community.

The differences between the American and the European understanding no doubt spring from the differences in cultural and economic backgrounds.

* No. 42, 1 December 2003

The American universities were, and still are, to a larger extent based on private funds, with donations, research and development contracts or tuition fees providing a substantial part of current income. The internal organisation, structures, processes and culture will of course adapt to act in accordance with such external conditions. The same mechanism applies to the European universities. Here, the external conditions are different in that universities are predominantly state-financed, and this is reflected in their internal organisation. This means that they are not market orientated in the same degree.

The differences are evident: in the American case a constant, close contact with its “market” is a must, whereas in the European case it takes a very strong political influence before any orientation towards a “market” emerges, even so the market is still, in most cases, not crucial for economic survival. This means that a huge effort is needed to spell it out that, in order to achieve a “close interaction with the market”, substantial changes must be brought about internally in the organisations’ structures, processes and culture.

Even though there is no immediate conceptual connection between “the entrepreneurial university” and teaching/education in entrepreneurship, we choose to link them in this report in order to draw attention to the challenges facing universities in connection with the development of entrepreneurship as a focused field of education.

2.1. THE CONTEXTUAL CHALLENGES – AN OVERVIEW.

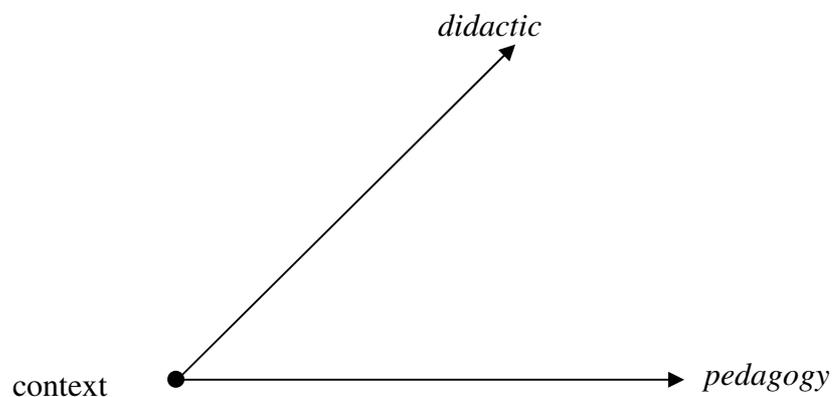
The chapter will present the point of departure establishing the foundation for the understanding chosen by the entrepreneurship concept in an educational context. (See also chap. 1). Next, the concepts “Triple Helix” and “entrepreneurial university” will be treated in more detail, amongst other things in order to establish a framework for the presentation of the empirical studies carried out at four European universities. In the process, a number of recommendations will be given for a constructive frame of understanding for development and establishment of entrepreneurship education at university level.

Furthermore, the chapter will include some reflections on the role of the teacher in entrepreneurship education. This important field has not been given much attention in the empirical case work; however, as our work progressed, we found this aspect more and more in need of attention, as it

is difficult to talk about other aspects of entrepreneurship education without involving the teacher role as well.

Keeping in line with the general model that has been developed to illustrate this work, in this chapter we will concern ourselves with the corner of the triangle that contains consideration and discussion of the meaning of the context for change in didactic and pedagogic understanding, as a basis for education in entrepreneurship

Figure 5. A new entrepreneurial context demands changes in didactic and pedagogy.



2.2. THE POLITICAL PRESSURE FOR CHANGES.

The two statements quoted in the introduction to this chapter about the future organisation of the universities are examples of the linking of innovation and entrepreneurship as university activities; and they both call for changes in the framework set up for universities if they are to contribute towards progress and economic welfare in a global competition. The developments we have witnessed in a number of European countries in recent years, and the political pressure that is evident, indicate that strong forces are necessary to make the universities change from a passive, elitist self-definition (ivory tower) into direct, active participants in society.[†]

[†] See e.g. the European Economic and Social Committee (2003), The Commission of the European Communities (2003) and), The Commission of the European Communities (2004)

All recommendations and discussions point towards changes being needed, as expressed in a slogan launched by the Danish government in 1995 that society should change from being dominated by a “culture of employee-ship”, believed to have been characteristic of the educational system in the 1970s and 1980s, into a “culture of self-employment, or entrepreneurship”. A campaign to promote this message was launched, and may have left traces but not significant marks. When reading the reports and recommendations from the last few years, they are in reality just recycling ideas launched previously. What is new in the discussion in Denmark since 1995 is the new role universities have been given by law, that their “...research and development results must contribute towards furthering economic growth, welfare and development in society. As central carriers of knowledge and culture, the universities must engage in exchange of ideas and competences with the society it is part of.....” (Universitetsloven 2003: §2, stk3; extract from the Danish University Act of 2003).

The paradoxical thing about this development is that universities have of course been contributing towards economic growth, welfare and development in society throughout the past 35-40 years. But, the rising numbers of young people who enrol in educations that last longer and longer in the process tend to lose contact with the (business) life that is supposed to provide the foundation for the entrepreneurship culture desired. However, as the demands for speedy transfer of knowledge to market cf. From Idea to Invoice, (2003) have been increasing at the same rate; the problems have become evident to everybody.

2.3. EDUCATION AS A LEVER FOR ENTREPRENEURSHIP CULTURE.

In former times the “entrepreneurship culture” was probably able to unfold in a more natural way. One generation taking over from the previous one in farming and artisan trades meant that those who started their own enterprises often had a relevant trade or commercial background, and not least, often had fathers who were self-employed businessmen. The decrease in the number of firms and the increase in the number of young people enrolling in longer educations have led to more and more voices, both in the school system in general and in particular at university level, demanding contact with the “society it is part of” to be re-established. The Green Paper – Entrepreneurship in Europe (European Economic and Social Committee 2003: 18) looking into this issue formulates the question like this:

”How can education support the development of the awareness and skills necessary for developing an entrepreneurial mindset and skills (entrepreneurship training as part of a school’s curriculum, getting entrepreneurs into the classroom, apprenticeships for students to work with experienced entrepreneurs, more entrepreneurial training in universities, more MBA programmes, matching entrepreneurial training with public research programmes)?”

The answers and recommendations offered as an invitation for discussion are:

”As already discussed in the main part of this opinion, an entrepreneurial mindset cannot be taught, but can be stimulated. Currently, too few younger people consider starting and running their own business as a realistic and appealing career option.

More young people need to be exposed to the concept of entrepreneurship from an early age. There also needs to be greater concentration on entrepreneurship in teaching later in the education process. This should cross-cut traditional academic disciplines rather than be merely circumscribed to business studies.

The potential for people to become entrepreneurs later in life should also be encouraged.”

This sum up an array of the problems mentioned above, and adds a number of others. The discussion about whether ”an entrepreneurial mindset” can be taught, or merely stimulated, will not be taken up here; for one thing because it is difficult to distinguish between teaching and stimulation. What is more interesting, is the recommendation to look into whether the traditional university set-up in itself constitutes a barrier, as the quote above advocates developments towards inter-disciplinarity beyond the general “business disciplines”. Furthermore, it is pointed out that teaching entrepreneurship also belongs in the portfolio of life-long learning. The formulation of the question also gives examples of developments in which entrepreneurship education should form part of public research projects and programmes.

Of particular interest is the remark that teaching entrepreneurship ought to be extended to other disciplines than business subjects and business schools. Statements to this effect have been made very forcefully by Allan Gibb, who on the same basis note (Gibb 2002) that entrepreneurship education is most effectively placed in centres that do not have too strong formalised ties with business schools and that in general education in this field is best left without too much formalisation. Better to have a looser structure in order not to strangle the “entrepreneurial spirit”. Others find that business schools focus too much on an “analytical problem-solution, risk-averse ap-

proach”, and that they tend to focus mostly on large and medium-sized firms. According to Gibb the ideal is to establish education in an area with access to, and cooperation with, the “stakeholder community”, and to take part in joint ventures and incubator activities together with other stakeholders, in order to always look at your values with other stakeholders’ eyes.

2.4. LEARNING GOALS – ENTERPRISING BEHAVIOUR.

In the Anglo-Saxon world, a distinction is made between “university” and “business schools”. Gibb’s believes strongly that the universities have been presented with a challenge by the politicians, and they ought to take it on. This will imply leaving the narrow entrepreneur definition (business orientation) and will instead focus on developing “the enterprising person”, who may turn into a self-employed person owning his or her own small enterprise, i.e. “an entrepreneurial person”, or a person who is able to pursue entrepreneurship and innovation in a large enterprise (intrapreneurship), or generally be a person who exhibits “enterprising behaviour”.

Gibb is aware that the distinction between an ”enterprising person” and an ”entrepreneurial person” may be difficult to translate and transfer into other languages than English; he describes the former as a person whose behaviour is characterised by being creative, full of initiative, and acting on his initiatives, who is able to inspire others and capable of doing things in a different way. The other type of person, “the entrepreneurial person” is very similar to the first; however with the slight difference that this person will in addition contemplate becoming self-employed, starting his own enterprise.

In the Danish language it has been suggested to use a term meaning “enterprising imagination”[‡], including characteristics such as imagination and creativity, and then to divide this term into two subcategories, depending on whether the enterprising behaviour has to do with entrepreneurship, i.e. starting your own enterprise, or with other kinds of creative activities.

Both understandings – enterprising and entrepreneurial – will be used here. We are dealing with an educational understanding which intends to promote “enterprising behaviour”, irrespective of whether this leads to a new

[‡] Quoting the former CEO of Bang and Olufsen, Anders Knutzen, who in a lecture mentioned this concept, which was formulated by the founders of Bang and Olufsen back in 1925, in what would today have been called their vision statement.

enterprise, development of an existing enterprise, or in any other way to stimulating or developing a person's inherent or acquired creative abilities.

Returning to Gibb's distinction between universities and business schools, his argument is that business-school education is about business, whereas entrepreneurship education is about "new venture management", "business planning", "growth" and "innovation". The way business schools organise their knowledge is based on specialised functions such as marketing, accounting etc. (See chap. 3 for further discussion) The issue is not moving entrepreneurship education away from business schools to new independent university centres, but to establish education in communities seeking to integrate theory and practice, and using teaching methods which have the intellectual resilience to make it possible to apply them in all sorts of university disciplines and areas.

Allan Gibb ends his article with the following policy statement: 'the challenge here is to distance the 'subject' from its heroic ideology and association with business and market liberalization philosophy. This paper has argued that there is a need for a radical Schumpeterian shift in entrepreneurship education involving 'creative destruction' and new ways of organizing knowledge and pedagogy'. Such a move would be paradoxically the 'last fling' of Schumpeter as the centrepiece for the teaching of entrepreneurship. Arguably, without such a denouement, fundamental progress will not be made' (Gibb 2002: 259).

He is not alone in this realization. In recent years, many writers have been focusing on the connection between successful entrepreneurship education, the educational context, and the pedagogics and didactics related to this field. Among others, David A. Kirby brings up this topic by asking: *Entrepreneurship Education: Can Business Schools Meet the Challenge?* (Kirby 2002).

The views expressed by Gibb have to a large extent formed the basis of this project's treatment of the subject. That business schools by definition are about business and organise their knowledge according to functions is self-evident, but there is nothing to prevent this type of institution from changing, and still embrace the business aspects, but also be able to organise their knowledge and practice to accommodate entrepreneurship, and in particular the development of enterprising behaviour.

This, then, is the presentation of the first foundation for the role of the universities in developing entrepreneurship educations, in which the goal is formulated as "the development of enterprising behaviour". The biggest challenge facing entrepreneurship education is no doubt the context, the

framework, i.e. the issue is how to establish an entrepreneurial university. Before introducing the concept “the entrepreneurial university”, the background of the concept will be explained briefly.

2.5. THE TRIPLE HELIX – THE BASIS FOR UNDERSTANDING THE ENTREPRENEURIAL UNIVERSITY.

The Triple Helix is a metaphor borrowed from biotechnology. It consists of three spirals and refers to the biomolecular DNA structures in biophysics. The metaphor is used to illustrate the three forces or actors in society: academia, enterprises and government. Government is to be understood here as the actor who sets rules and norms for the others, but who may also be an active player in any cooperation. The basis of the model is a discussion about innovation models at macro level and can be described as follows:

”This model refers to a spiral (versus traditional linear) model of innovation that captures multiple reciprocal relationships among institutional settings (public, private and academic) at different stages in the capitalization of knowledge. These three institutional spheres which formerly operated at arms' length in liberal capitalist societies are increasingly working together, with a spiral pattern of linkages emerging at various stages of the innovation process, to form the so-called "Triple Helix". (Viale et al. 1998)

The model can be interpreted as a neo-corporatist development, in which the three parties, in a top-down process, initiate joint institutions to further the development and exchange of knowledge and resources between the participants, to strengthen innovation and competitiveness. In the examples known where the model has taken just such a shape, the results of the cooperation have tended to be meager, both as to integration between the participants and start-up of new technology-based, innovative enterprises – and more often than not, the results have been a fairly low-tech output.

The opposite of this is an evolutionary understanding of the concept, aiming for – as proved in practice – that it is possible within specific local contexts to develop relationships, e.g. *loosely linked mutual relations* or joint projects, which over time make the actors involved change their way of working and adapting to the changing situations, in order to be able to act on changing opportunities.

Used in this way, the model has managed to produce a number of successful results, as this understanding of the model places the universities (academia) in the role as initiator of a socio-economic development in coopera-

tion with the other actors. This understanding has proved successful especially in geographically peripheral areas.

The model can be used at micro, meso and macro level. The actors working at *micro level* in the Triple Helix context can be:

- University researchers turning into entrepreneurs using their own knowledge as the foundation.
- Entrepreneurs working in a university laboratory.
- Public researchers working in private enterprises from time to time.
- University and industrial researchers heading regional development projects in tandem.

At the *meso level* it is institutions participating in the model. The examples include actors from different sectors established to create innovation, such as:

- University-based spin-offs.
- Venture capital enterprises established by universities, science parks etc.
- Institutions cooperating and coordinating innovation, to act as the local support for development, dissemination and organisation of technological know-how in a region

At the *macro level* the model implies that rules and regulations are drawn up based on prior negotiations between the parties. This is also where we find the framework conditions for the Triple Helix model – which include all aspects, such as financial support, patenting and stock market rules etc. And not least, the rules and regulations required allowing the universities and their researchers to play their part in the model.

The Danish University Act is a case in point in this context. The Act offers the universities the opportunity to leave the “ivory tower of independent reflection” to become “a generator of economic wealth”, or to choose to play both parts (Leydesdorff et al. 1998)

The most common perception of the model (e.g. Leydesdorff et al. 2000) sees it as an expression of how to understand innovation systems, including technology transfer, and as basis for building up trilateral networks and hybrid organisations. When dealing with entrepreneurship at university level, it seems obvious to interpret the Triple Helix as an expression of close relations between the parties. This can be seen in the examples above at the micro level, e.g. that research-based high technology leads to entrepreneur-

ship. The Triple Helix understanding can be seen here as a necessary, but not sufficient prerequisite for entrepreneurship. The principle is that the university in future ought to play a more active part than previously seen.

A very concrete example, mentioned in chap. 1, of how this understanding can be used was developed by Matlay & Mitra (Matley et al. 2002). They operate with a goal for society to create sustainable competitive advantages by means of mutual relations between key factors, such as learning, knowledge, innovation and entrepreneurship, which they call “the key drivers”. Technological innovation is thus not part of their field of operation, but business-related supplementary training is. The actors cooperating in their centre (Enterprise Research Development Centre (ERDC)) are e.g. science parks, regional offices of education and employment, trade and industry, SME’s, the university itself, various research councils, regional development funds, EU funds, local and regional authorities.

The example illustrates the principal aspects of the Triple Helix model, and at the same time it argues that a necessary precondition for entrepreneurship education is that ‘fundamental requirements of learning, knowledge management and innovation can be effectively addressed’.

The linkage of the Triple Helix and the entrepreneurial university has so far treated the two concepts as belonging naturally together; however, this is only the case in a European context. The entrepreneurial university as a concept originates in the USA. In the following, the concept will be treated on the basis of the substantially different nature of socio-economic and cultural conditions prevailing on the two continents.

2.6. THE ENTREPRENEURIAL UNIVERSITY.

In the introduction to this chapter the “entrepreneurial university” was characterised as an institution which, by virtue of its close and intense interaction with its communities, provided the foundation for regional and national growth and development. We proposed the thesis that there is a difference in content, depending on whether the university in question is European or American.

The American understanding of the term is direct and unambiguous: the entrepreneurial university is associated with a business operating in a market, servicing its customers. This is especially true of the prominent, private universities. When telling the story of the development of Stanford after the Second World War, it happens under the headline “Inventing the Entrepre-

neurial University: Stanford and the Co-Evolution of Silicon Valley” (Lenoir et al. 2003).

The story is about how the university was in a bad financial shape at the end of the War and had to make a special effort to get back on its feet. Special attention is given to Dean Frederick Terman’s efforts to build up Stanford’s School of Engineering. Terman realised that he would only be able to achieve a high scientific level by relying on public, and patient, grants; industry could not be relied upon to pay for more than it got back (in their own opinion); that is, could not be counted on to pay for fundamental research and similar activities.

Once the high scientific level had been achieved, and its high level guaranteed, then cooperation with industry could be kicked off, on the condition that it would never compromise the fundamental principles of independence and quality. As a result of this, they were able to generate technological innovations on a scale that eventually led to what is today known as Silicon Valley. However, recognising Stanford’s contribution towards the foundation of Silicon Valley is impossible without at the same time also recognising industry’s contribution to the development of the university.

The success of Stanford rests on mutual flows, and not least on the creation, both internally within the faculties and overall at the university, of an entrepreneurial culture, which has helped produce great results. One of the elements of this culture was the synergies made possible, e.g. between the engineering and medical studies, by being placed on the same campus. The decisive premises are that there exist demands and challenges from the surroundings, and that the inter-disciplinary cooperation between departments and between faculties functions in constructive ways. This cooperation is crucial for the establishment of new enterprises based on “convergent” technologies, which in turn can only be developed and utilised as a result of cooperation. This is true of e.g. the computer, bio- and nanotechnologies.

This brief glimpse of the long and detailed historical exposition of the “invention of the entrepreneurial university” gives a description of a private university, which – on the one hand – realises that relying exclusively on the market conditions is not feasible, but – on the other – knows that there can be no growth and development in society unless scientific results are transformed into patents and enterprises. The story also tells us that it is necessary for the various specialised disciplines to cooperate; otherwise no break-through innovations will emerge. And finally, the story offers a few glimpses of the importance of this inner life. Any culture must be based on a desire to be part of a connected whole. The leader of the organisation, Frederick Terman, has been all-important in plotting the course and keep-

ing the organisation united. The School of Engineering, which is also today a very dynamic and entrepreneurial unit, fittingly bears his name.

2.6.1. The new (American) entrepreneurial university.

Another attempt at pinpointing the entrepreneurial university can be found in the five statements below. Please note that it is called the “new” entrepreneurial university (Trachtenberg 1999).

1. The new entrepreneurial university is an institution that generates money.
2. The new entrepreneurial university is an institution where it is legitimate to refer to students as “customers”.
3. At the new entrepreneurial university the teachers and the administrators will be rather alike and often educated at the same universities.
4. The new entrepreneurial university will at long last have found a way to live in close contact with the outside world that we are supposed to teach our students about.
5. At the new entrepreneurial university our status will actually improve, in spite of complaints to the contrary

These slogan-like statements, made in a speech to university administrators, convey the same message as the Stanford story. The university must be judged on business principles, i.e. the students are customers, and generating and building up capital are legitimate and necessary activities. It is stressed that university administration and research/education are not antagonists; quite the contrary, they are essential complements for the achievement a common goal. The contact to the outside world is crucial, not least for the students. The university president Trachtenberg says: “It is serious business we’re in. Universities are critically important to American society. So it is serious business to get along with business leaders and with bureaucrats. It is serious business to listen to our customers and hear what they need and want”. The status that is supposed to be improved for the universities in the future is thus based on a behaviour signaling: we are a co-partner together with the other sectors of society.

So, the concept of “the entrepreneurial university” denotes an institution which sees its surroundings as a market and reacts to it accordingly. A shortcut to explaining the entrepreneurial university is to say that it is the antithesis of the ivory tower.

The interesting and the essential thing to bear in mind when attempting to set up the frames to understand the concept is not so much the definition or the characteristics as such, but to a much greater extent the process or the development which has the entrepreneurial university as its goal. As it is evident from this title: ‘The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm’ (Etzkowitz et al. 2000). And from the quote: ‘this article analyzes the transition from the Research University to the entrepreneurial university’ (Etzkowitz 2003). Yet another recipe for “inventing” the entrepreneurial university.

2.6.2. The entrepreneurial university in a globalised economy.

The issue here is a movement away from the ivory tower/research towards a more entrepreneurial understanding. Obviously research and education form part of this too, but in an understanding marked by an entrepreneurial aspect, i.e. an understanding of knowledge and knowledge production as a fourth factor of production, far exceeding the three original ones (land, labour and capital) in value and importance. And the entrepreneurial aspect involves identifying opportunities and mobilising resources to realise the potentials. This will be discussed further in chap. 3 and 5.

It should be borne in mind, of course, that new knowledge and innovations do not have any economic value per se. New knowledge can be excellent and give its originator high status, but still be inconsequential for the “economic system”. New knowledge will always be without value in an economic situation where being entrepreneurial means copying what others have invented already. However, a dynamic, global economy requires the ability to combine resources (including knowledge resources) in new contexts, and the traditional division of labour between academic research and education and the business sector must be challenged. Economic utilisation of the new knowledge produced by research calls for the traditional research and education university to “mutate” into the “entrepreneurial university” (Röpke 1998)

Etzkowitz (2003) points out that in the USA the development has been bottom-up, whereas in Europe it is a top-down process. When the development seem stronger in Europe, it should not be seen solely as an indication that European universities are becoming less research-oriented, but rather an indication that their research and education activities are increasingly seen as knowledge capital, expected to realise a profit for operations and devel-

opment, both by the universities themselves and in particular in their interactions with society, above all the business community.

Globalisation is directly linked with the "entrepreneurial university". When the market increasingly comes to play a role for the universities, it is as a replacement for funds traditionally paid by the taxpayers. The European welfare states can no longer afford to maintain high welfare and pay for all the things people have come to expect in a modern society. Under the heading "The impact of globalisation on universities", Peter Scott, the vice chancellor of Kingston University in Britain, says that when universities are to be seen as independent players in a market as a consequence of globalisation, then governance of an independent state-financed public service university will be under threat as well, as the well-known form of governance will increasingly become an anomaly.

The challenges of globalisation then concern the governance, the management as well as the financing of universities. Typically the universities have reacted by seeking to recruit ever more students from abroad, develop global partnerships, increase the commercialisation of research in the form of technology transfer and consultancy services, and not least by developing a management culture and infrastructure to govern and manage these new activities (Scott 2004).

2.6.3. Governance in an entrepreneurial university.

And what, you may well ask, has all this got to do with teaching, pedagogic and didactics? The answer might well be: Not much, actually. There is no self-evident connection between the concept 'the entrepreneurial university' and entrepreneurship education. The connection arises because the private elite universities in the USA many years ago found themselves forced to raise finance in the "market" through contracts, sponsorships and tuition fees. A so-called "bottom-up approach" along the lines: Where are the opportunities to remain as a university? How to raise funds to develop this university?

In Europe, until quite recently, the situation has been characterised by tax-financed, "independent", usually meaning "academically" independent, universities. The effects of the global market forces through legislation and diminishing funding have, however, provoked a new orientation. We thus have to do with a "top-down" development process.

Returning to the connection between "the entrepreneurial university" and entrepreneurship education, it is still our thesis that the development of en-

trepreneurship and enterprising behaviour as subject fields and frames of understanding can only happen concurrent with a transformation of the universities from ivory tower into entrepreneurial university. Or into the "the modern university", as it was called once when the concept was used to refer to new, alternative, experimenting universities, in an age when globalisation and other external conditions had not yet started unsettling the stability surrounding the financial situation of the universities. More on this in chapter 5.

"The modern university" is described as "a social system; that is, of entire universities and their internal departments, research centers, faculties and schools. The concept carries the overtone of 'enterprise' – a willful effort in institution-building that requires much special activity and energy" (Clark 1998)

A number of European innovative universities are described in "The Organizational Pathways of Transformation to Entrepreneurial Universities". The focus here is on both the internal and the external conditions which create and institutionalise "the modern university" (Clark 1998).

The (European) entrepreneurial university can be described in the following way (Röpke, 1998):

"An entrepreneurial university can mean three things:

1. the university itself, as an organisation, becomes entrepreneurial.
2. The members of the university - faculty, students, employees - are turning themselves somehow into entrepreneurs.
3. The interaction of the university with the community, the "structural coupling" between university and region, follows entrepreneurial patterns."

All three criteria are necessary and sufficient to "turn" a university entrepreneurial, but the three criteria are inter-dependent. They concern internal structures and processes, and the demands apply not only to the teachers and researchers but to the entire staff, and to the important relations between the internal and external community.

A fuller definition, which includes the Triple Helix concept, elaborates the above:

"An entrepreneurial university is an institution:

- which is based on and embracing the Triple Helix thinking and thus engages in a dynamic interaction with its environments (industry – government)
- which forms alliances with other institutions to let heterogeneous competences meet (may be on an inter-faculty basis)
- which develops learning forms, always taking goals and target groups into consideration
- which couples practical knowledge with theoretical reflection and professional development
- which seeks to strengthen personal development and the development of the abilities for self-organisation and own learning.”

In short: “The entrepreneurial university demands not only innovative approaches to learning but also fundamental change in how these institutions operate” (Atherton 2004).

2.6.4. The internal processes of the entrepreneurial university.

No aspect of the organisation’s life will be left unaffected by the change from ivory tower to entrepreneurial university. Clark’s studies (1998) led him to the conclusion that it takes five steps to complete the change. First, introducing stronger management than is customary for European universities. A management capable of operating faster, more flexibly and in particular more focused when faced with growing and changing demands. This demand for management changes does not only apply to the top level, but should be reflected at department level and in administrative units.

The second step is the introduction of a more flexible structure for both peripheral functions and central academic departments. There is a strong need to establish links and networks with external actors on projects, technology transfer, patenting authorities etc. And also to set up centres which are able to respond to changing demands and, while still retaining a profound professional depth, to expand and develop complementarily with other specialist disciplines in structures surpassing institutional boundaries.

The last three steps in the process all concern the fact that “the enterprising university” must secure its financial independence by not being tied to one single source of finance. Finance must come from many and varied sources. Once these three first and very important steps have been taken, the fourth is crucial for whether the venture will succeed. This is about se-

curing the academic staff's acceptance and positive participation. Acceptance of the new form of governance is important. The final step, then, is to establish a strong "enterprising culture". This is done by practicing it, and therefore letting it permeate every corner of the institution.

A European Association of so-called "innovative universities" has been established, which has Twente University as a member. Ålborg University is included as the only Danish representative. A circumstance that has led to close cooperation for the development of joint courses and curricula for the entrepreneurial education.

2.6.4.1. 10 propositions as inspiration for an entrepreneurial culture.

The inner life and the daily running of the entrepreneurial university, or "the core aspect of the university's mission", is then all about "encouraging enterprising behaviours, attitudes and activities." (Atherton 2004). What this means in practice has been the subject of a detailed study by a group of researchers at German universities in The Berlin Propositions 1999, which offers 10 propositions 'to foster the culture of entrepreneurship at German Universities' (Braun et al. 1999). These propositions are not explicitly rooted in the entrepreneurial university as outlined above, but the content of the propositions is a natural continuation of the discussion of culture in the introduction.

Here we maintained that as far as the connection between external demands and the need for internal adjustments is concerned, the conditions are the same for European and American universities. The difference between the two cultures lies primarily in the difference in the forms of finance available and the consequences it has for the ways in which the alignment of external demands and internal necessity happens.

By this we mean that it is assured that there is a close relation between the way in which effective goal seeking organisations arrange its structures and processes and its external influences. Such a assumption must be the case for universities, no matter where they are positioned when changes occur in the external conditions; for example lack of funding for daily operations then the university must orientate itself toward other sourcing funding. The speed in the processes of change will according to these assumptions be dependent on a number of specific issues, as Clark has discussed (see above) - not least - of the development in the financial or funding circumstances.

The 10 propositions to create an “entrepreneurial culture” constitute a programme which in a market situation would have been drawn up as a condition for survival. In the European context, they constitute guidelines for a “top-down” based organisational development process. As has already been discussed several other places the considerations made here are not necessarily based on difference in cultures, but as a question of survival (See the case of Twente versus Rostock for example).

1. The first proposition relates to the university’s responsibility for creating a “culture of entrepreneurship”. Normally the universities tend to focus in their education on creating “care-takers” of the existing order of things, either in private or public enterprises. The proposition here strongly advocates that the culture must encourage “enterprising behaviour”. It may seem obvious to state this as an obligation for universities, but it should be borne in mind that not that long ago the predominant opinion among European universities was that whatever happened to the students after graduation was their own, or “society’s” responsibility. This opinion is becoming rarer, but from there to actually spelling out what would be desirable is still a different matter – and what is “entrepreneurship culture” anyway?

2. The second advice is pointing out career paths and paving the way to realising them. The paths have their foundation in the development of enterprising behaviour. Implied in this is a positive attitude towards pursuing entrepreneurship, either with a view to creating growth, an enterprise or just create something on your own. Röpke suggests a different categorisation when he identifies a number of potential outcomes of university influences. You will find the self-employed entrepreneur; the leader, the intrapreneur who is able to motivate others; the expert, the geek, the ideas-generator who realises his own ideas but finds it difficult to communicate with others; or the adaptive, communicating salesman-type who is able to transfer ideas to others (Röpke 1998).

3. The next question is then how, and where, all this is supposed to happen? The advice on this is that entrepreneurship should be a part of all studies. Such a development would further inter-disciplinary activities as a basis for development of creative and value-creating activities. There are two points to this question. One, that entrepreneurship should not be narrowed down to specific subjects, departments or teachers with particular interest in it; and, two, that the subject should be used to bring disciplines together, which will then lead to new, innovative approaches. The basis for innovative approaches is that several competences will be given the opportunity to work together.

4. In apparent direct opposition to this, it is then recommended that all universities set up a "centre for entrepreneurship". The reasoning is that such a centre will be able to establish the administrative freedom needed to combine academic quality with entrepreneurial activities. This seems quite sensible, as long as it does not lead to the field being isolated. Other organisational and administrative frames are necessary as well to make it work. The danger persists, however, that isolation and special initiatives will mean that the rest of the university remains unaffected by a development which could benefit the entire organisation. As a balancing act, it might be sensible to have a special department dealing with development and new initiatives, enjoying a status as a project organisation vis-à-vis the "necessary bureaucracy". From this department, changes could then be transferred to other units.

5. Teaching processes at a university of entrepreneurial culture should focus on "action-oriented" learning. It is the duty of the academic staff to plan their teaching according to principles and methods encouraging enterprising thinking and action.

6. The teaching and learning processes should offer the students opportunities to develop their entrepreneurial drive, ability, personality and professional skills to enable them to carry out various stages in the entrepreneurial process. And in this context, concepts like flexibility, leadership, team spirit and judgement are important skills to access new resources of knowledge. In a situation of ever changing markets and conditions it is necessary to develop competences in teamwork and leadership, as this rarely calls for the qualities of the "the lone wolf", but a team.

7. It is, and will always remain, the principal duty of the university to disseminate factual knowledge and encourage critical reflection – and to let that be the foundation of ideas generation and development. Just as the knowledge resources, infrastructure and international networks of the universities provide fertile soil for developing entrepreneurial ideas, concepts and initiatives.

8. For the development of entrepreneurial culture, role models are very important, for the students to take as examples and learn from. Introducing role models and a strong integration of a "pracademic" (practice/academic) understanding of practice would be a welcome innovation.

9. To make this work, a high degree of flexibility will have to be demanded of both teachers and university administration. It should be possible to use the university's infrastructure in the initial phase. Active support from the academic staff is of vital importance for implementing entrepreneurial ac-

tivities. This should be self-evident, but the enthusiasm of ardent supporters and especially interested teachers is seldom sufficient. There is a need to incorporate cultural frames for those who are not devotees of entrepreneurship. Otherwise there will not be any real entrepreneurial culture.

10. It is important to recruit the best students, and in particular the most enthusiastic and highly motivated. Students should be challenged when choosing their subject or study programme, probed as to their intentions and expectations, and given intensive support and guidance throughout the process. They should not be pushed into entrepreneurship, as the entire culture must reflect a desire to develop their drive, abilities and imagination, in short “enterprising behaviour”.

2.6.5. The role of the teacher in entrepreneurship education.

This leads us to the question: what, and who, is a teacher of entrepreneurship? What does the teacher role consist of? If not dealing with this issue explicitly, it will probably be assumed that the teacher role is the traditional university teacher role. Which may be a too simplistic way of looking at it? The role of the teacher must be different, e.g. in relation to flexibility and classroom/team work. Not least will it be a demanding task to offer support and guidance to highly motivated and academically proficient students.

There is general agreement that teaching/training entrepreneurship requires a different casting of roles compared to traditional teaching where the teacher passes on the “right” knowledge to the students, and then later checks that they have learned it/can recall it.

Actually, not many have commented specifically on the role of the teacher in “the new university”; however, a few have speculated on demands and expectations.

Fiet (2000a) takes up this problem, and calls for a more deductive approach to teaching. The new roles he assumes for teachers and students are therefore not that ground-breaking. According to him, the teacher’s job is to gain the acceptance of the students of the learning contract, and to determine which competences the students must acquire. The teacher is thus still to be responsible for defining the curriculum, at the overall level at least, but during the process he is to function as a coach rather than spend his time and efforts evaluating the students’ performance.

All in all, the teacher's role is described as involving more coaching than ordinary classroom teaching. But it is still the responsibility of the teacher that the students learn "the right things", and he is to keep a close eye on the student's learning processes, also if the student e.g. works as an intern in a firm or on a project.

In the literature dealing with development of teaching methods, it is generally recognised that assuming new roles in connection with entrepreneurship education is not easy – and this goes for teachers as well as students.

It can be difficult for the teacher to change his or her teaching methods. Firstly, because some teachers like to be in control and feel responsible for what and how the students learn. However, often this reservation is not real as it is based on the false assumption that it is possible to control what the students think and learn – which is impossible, no matter which teaching methods are used.

Secondly, teaching in a way that involves the students more makes it necessary for the teacher to prepare for a number of different scenarios, and in the end it is more time-consuming and rarely compensated accordingly by educational institutions (Fiet 2000b, p. 110-111).

Jonsson & Jonsson (2002), too, comments on the challenges of a new role for the teacher as "it is more difficult to know your role and instead of presenting the right way, you have to go into a situation where you as a teacher present maybe a possible path, an alternative to other possible interpretations of a situation. This means that you need to be aware of what other teachers are presenting and what kind of question they are formulating. The possibility to be a solo player as teacher is reduced to a minimum".

Apart from it being difficult for the teacher to get used to the new role, the reactions of the communities can be less than forthcoming as well. The teaching reform suggested by Laukkanen (2000) is rather drastic, and it requires the university to more or less directly help establish new enterprises. This means that the teachers will have to play a much more proactive role, which will lead to new types of practical tasks and potentially risks as well. This is not very comfortable and not conducive to an academic career. But, as it is stressed, it does offer unique learning opportunities.

Studies of six European education programmes in entrepreneurship show, however, that the teachers involved did in fact take on new roles, e.g. role model, consultant or adviser (Garavan et al. 1994.1) – all roles that teachers and researchers at universities are not normally expected to play.

The most important parameter for success in this area is whether the attitudes and commitment required are present among the teachers and administrators involved, and whether there is freedom to operate in accordance with the suggestions above on the internal life in an entrepreneurial culture. The role of the teacher is only one element in this, but an important element, which has not really been investigated sufficiently in the “entrepreneurial university” context.

The above treatment of the teacher role is limited to judging a few principles. The scope for studies of this role is much wider, and will be further elaborated on below. Just as important, however, is whether the outside world, which the university is supposed to be a part of, wants to play its role and to what extent. Where does the teacher/researcher fit in? What is his or her role and place in this context?

2.6.6. The university teacher/researcher in the entrepreneurial universe.

In an attempt to shed some light on this topic, Bouchikhi (2003) pictures the teacher/researcher in entrepreneurship at the centre, right in the middle between three circles of interest groups, who all work in isolation in their respective circles. One group is the “practitioners”, i.e. the entrepreneurs, venture capitalists and consultants. Another group is the “politicians”, and the third is “academia”, the group that the teacher is a member of. By this we mean the aforementioned triple – helix relation.

It is hard for the teacher/researcher in entrepreneurship to establish close contact to any of the groups, as he is in a sort of no-man’s-land, trying to bridge the three circles in the network but not belonging to or recognised by any of the groups (Bouchikhi, 2003). The entrepreneurs do not recognise the researcher as one of “us” and do not think that research can make any practical contribution to their entrepreneuring, whereas they expect to be able to get some help with marketing, finance and such like. The consultants for their part are not really interested in entrepreneurship as such, only in the problems of larger enterprises; their main interest is promoting themselves, and in the students as potential employees. Venture capitalists understand even less about research; but they have very high opinions about their own contributions.

Politicians find it difficult to understand that results cannot be achieved overnight. They tend to have unrealistically short time horizons for the initiatives they launch. Academia tends to distance itself from the part of en-

trepreneurship which tries to venture outside the university's frames and norms for right and proper research fields. Research and teaching in entrepreneurship has not yet found its proper place in the academic universe, and research in this field is fraught with problems. It is often seen to be a low status area in that it is often seen to be connected in the long term to the practical form for something apparently simple and cross disciplinarian.

As will be understood, there are many reasons why the university teacher feels like an outsider in the universe he is supposed to be a part of, or to try to bring together. What is to be done about this? What should the content of the teacher role be? Bouchikhi thinks the solution may be to build up a "plural professional identity".

The concrete suggestions to establish a definition of the content of the role are that the entrepreneurship teacher must be able to combine several roles: "the obstetrician", i.e. somebody in a unique position to keep the core issues of the profession in focus; "the trader", i.e. somebody who creates value for his "customers" by transferring information, ideas and practices across spheres that could benefit from one another, but tend to overlook each other. The third role is the "chameleon", i.e. someone who needs to be able to talk to a broad range of people, in many "languages" and adapt to many cultures without losing his own identity.

We have to do with deep-rooted problems and far-reaching solutions, which will demand fundamental ideological struggles to change. The central issue is to make people understand the value of cooperation across the three circles or groups: practice, research and the political life. Which brings us back to the Triple Helix line of thinking?

It is about bringing the three circles together more often and making them see the sense in creating synthesis out of these meetings. The development of a plural professional identity must start with a revolt against the "second-class citizenship" that Bouchikhi thinks that the rest of the academic world relegates the teacher/researcher in entrepreneurship to.

As mentioned in the beginning of this chapter, the teacher role has not been included in the studies carried out at the four universities. There is no doubt, though, that it is a fairly important issue everywhere. And will be so increasingly, as student numbers grow. As universities more and more often are faced with demands for more enterprising behaviour, developing the teacher role will become one of the big challenges for universities and schools. In this way a great need for education of teachers and "MBA – training for trainers" programme has been demonstrated. And similar are under development to fulfil that need.

2.7. THE FOUR CASES - SEEN IN CONTEXT.

As described in chapter 1, the empirical experience in this project is based on visits to four European universities, characterised by each having their own approach to entrepreneurship education.

This study was planned as an explorative study in which knowledge about the phenomenon to be explored is gained as the empirical insight broadens and leads to new recognitions. Consequently we are not going to undertake a profound analysis or comparative studies of our four case studies (Blenker et al. 2004b, 2006c). Below we will attempt to define a number of the challenges connected with developing entrepreneurship education, in the four European universities studied.

No two communities have been alike. It is characteristic that only one of the universities (Twente, the Netherlands) has been an “entrepreneurial university”, strictly speaking. In the UK, the University of Central England (UCE) is a member of a network called Mercia, Institute of Enterprise, with Warrick University as the hub. Stockholm has a network as well, Stockholm School of Entrepreneurship, (SSES), established by four universities and institutions of higher education. At the Rostock University education was not originally placed at the university itself, as it could not be contained within the framework of the “normal university” (the ivory tower).

The four case universities all have a history of development showing that their present status and activities are based on outside pressure for changes in the educational field. There have been strong forces at work in society, calling for innovation and dynamics in the economy, in particular the business sector. But there have also been strong forces at work inside the universities, urging a new orientation towards the future and a desire to see universities as generators in an economic growth philosophy; and of course, it has been natural to seek to participate in the fields where the funds for research and development are to be found. However, it has to be added that this is typically only true of the units, departments or centres embracing entrepreneurship. With the exception of Twente, where the entrepreneurial orientation has been, and remains, part of the survival strategy for the entire university.

As already mentioned, Twente University was also included as a case in Clarck’s studies of entrepreneurial universities. Thirty years ago, the university had to think of new research fields, as the declining regional industrial base in textiles together with diminishing student interest in engineer-

ing and natural science studies threatened to close down the university. The deliberate, controlled development towards an entrepreneurial university was a success, as the opening up to the outside world became a natural and necessary activity. Business Development and Entrepreneurship constituted the most important ingredients in the plan to save the university in the north-eastern corner of the Netherlands.

Interaction between the faculties and businesspeople is considered a must; employing experienced people from industry to coach entrepreneurs has become the norm, just as people with a business background are welcome on the teaching staff. Close contact between the natural sciences, which also include entrepreneurship and business studies, is encouraged. Special education programmes for natural science students have been established; and the university is a campus university, the only one in the Netherlands (i.e. the students live in residence halls on campus); science parks for students as well as researchers have been set up, on campus, in cooperation with private enterprises.

Contrary to Twente University, which is a technical and natural science university with a very dynamic business studies research unit, Rostock University is an old, 'historic' (founded in 1419), multi-faculty university, which changed its orientation very soon after the fall of the Berlin Wall in the direction of the new political and economic goals and methods. Research in economics and business studies was re-directed towards management and the market economy. About half the students at the department for business economics study business pedagogics with a view to teaching at business colleges.

Around the head of the department, Professor G Braun, interest in entrepreneurship started to grow. The region in general and the Rostock area are suffering from low industrial activity and growth, brain drain and similar negative trends. Supported by EU grants, local business interests and the university itself, a department for Human Resource Development (HRD) was established. Formally part of the university, but enjoying far-reaching independence, and together with an EU project (ROXI), it was intended to stimulate development in the area by teaching and supporting entrepreneurship.

The background was that the professor also worked as an expert on developing countries and had insight into projects designed to develop business in these areas. ROXI started in 1997 on the same foundation and employing the same methods used in third-world countries. The idea is primarily to offer help for self-help to people with higher education, and interest and competence in business.

Interest from students was modest, apart from dedicated entrepreneurs or students on the verge of quitting their studies to start on their own. The teachers came from the business economics/pedagogics studies and external business people with practical business experience.

The people involved in the ROXI project were very good at attracting attention and enjoyed the full backing of the regional government and the business community, which culminated in the university receiving a grant from the federal EXIST-programme[§] in 2002. Rostock University is today among the 25 most entrepreneurial universities in Germany. The HRD department has since changed its name to IBEC (International Baltic Entrepreneurship Centre), and later changed to “Hanseatic Institute for entrepreneurship and Regional Development” and spearheads a network of institutions from the countries around the Baltic with an interest in development of entrepreneurship. This has prompted a development similar to the one previously described for Twente, as the EXIST grant has become a top priority for the university management, which intends to involve all faculties in the development.

The last two cases are both network-based. One, the SSES (Stockholm School of Entrepreneurship), was established in cooperation between four universities and institutions of higher education. The aim was to place Stockholm on the map as a frontrunner in innovation and entrepreneurship, as a result of the synergies of the cooperation between the participating institutions.

The SSES itself employs very few teachers and researchers. Instead of most of the education and research in the field are carried out by, and at, the initiating institutions. E.g. the Stockholm School of Economics is renowned for its excellent research and education in entrepreneurship, and was indeed also the driving force behind the establishment of the SSES. The SSES thus functions as a development and resource pool for interested teachers and researchers. Through the network, any contacts established to other communities, at home and abroad, will benefit the other participating institutions.

However, this model entails a number of administrative and practical barriers, especially as to the distribution of income and costs. One advantage of the model is the larger critical mass created in relation to entrepreneurship activities. This project has not examined the relationship between the SSES and the institutions behind it, and it is difficult to evaluate the importance

[§] Existenzgründungen aus Hochschulen. Ein Programm des Bundesministerium für Bildung und Forschung.

of the organisational form for the development of these institutions in general. As the finance is based on a private donation as capital base, and operations on the services “sold”, it can be difficult for the SSES to develop close relations with the institutions, as they will no doubt wish to develop similar competences with their own resources. The model should therefore be seen as a supplement and a support for institutions that have entrepreneurship high on their agenda, but choose not to invest their own resources in it.

The final case is the University of Central England (UCE), Birmingham, which is a large, multi-faculty university. At the UCE, entrepreneurship is researched and taught by teachers attached to the Enterprise Research Development Centre (ERDC) and the network Mercia Institute of Enterprise.

The establishment of Mercia sprung from a wish, but also a certain pressure, from both national and regional political bodies and business and professional organisations. The intention was for Mercia to act as a catalyst, to connect the knowledge producers, enterprises and organisations and individuals involved in the region’s industrial development, including start-up of enterprises.

Mercia is divided into two groups. The Education Group, has its focus on enterprise education and e-learning, and the other, the Enterprise Group, deals with spin-outs, technology transfer and the commercialisation of university activities. The Enterprise Group e.g. awards grants to researchers wanting to pursue a business idea.

Mercia has at its disposal a pool of funds, which the participants can apply for, to develop education and teaching. The member universities also take turns offering joint seminars and workshops. The teachers attached also form a pool, teaching wherever needed, without stumbling on administrative barriers or bureaucratic financial settlement schemes.

The UCE offers an MBA programme in entrepreneurship. Their flagship is an MSc in Entrepreneurship, which is a traditional course mixing theory and practice, offered in a so-called “ideas lab”. The final thesis can take the form of either a traditional theoretical dissertation or a comprehensive business plan, building on the student’s own ideas.

As mentioned, research and teaching take place in close cooperation with the ERDC, where the teachers and researchers are in charge of the ongoing contact with the local business community, offering training and “consultancy services”, and participating in a number of project-based developments, often financed by EU grants, local or private foundations. There is

no contact with the other faculties as the university has not made such development financially possible.

In contrast to the SSES, the other network example, here it is the university departments or the researchers and teachers themselves who make up the network. There is not, as in Stockholm, a separate financial base outside the university. The network only exists to the extent that the involved parties participate actively and help develop the field. This model thus requires a lot of commitment, and its success or failure rests solely on the individual participants' own involvement on both the home front and in the network. The Mercia model is very similar to the initiative launched in Denmark in 2004, the International Danish Entrepreneurship Academy, IDEA.

2.8. DISCUSSION OF THE FOUR CASES.

This short review of the cases was never intended as a ranking of the examples of how to develop entrepreneurship education but to find the most suitable way to do it. A common trend has been pointed out, which has manifested itself in different ways concurrently in the selected four European regions. In all cases, a general political pressure has been noticeable in recent years, or at least a call for the universities to play a more active role to further industrial development and growth in the four European economies.

In addition to the teaching and research activities expected of universities, demands have voiced increasingly that parts of the universities' research must be market-oriented and that the "entrepreneurial university" be implemented in Europe. This makes endogenous changes necessary to comply with the exogenous demands (Etzkowitz 2003). That is, it will only be possible to meet the pressure from society and the challenges of innovation and change if changes are made to the internal structures, processes and cultures.

The cases described show how difficult it can be to combine such demands with the entrenched norms and structures of the universities. As the only example, Twente has over a long period of time, based on a top management decision, managed to develop its organisation, structure, processes and culture towards meeting the criteria of the innovative or entrepreneurial university. It is working to further develop the entrepreneurship programmes to match the quality of the rest of the university. Coaching, short-term fellowships, project internships etc have been incorporated in the university research and educational community as part of a centre develop-

ment. Furthermore, they are giving high priority to inter-faculty developments.

The other three cases demonstrate that educational programmes in entrepreneurship and related activities force the universities to find other forms of organisation for these kinds of activities. The classical university (the ivory tower) cannot contain educations that typically have a “pracademic” content and a teaching staff recruited from a research-based as well as a practical background.

Finance for these activities cannot normally be found within the ordinary budgets of the universities either. It takes EU grants, national, regional or private foundations to finance the transition into an “entrepreneurial university”, and often to finance the operations for quite a while as well. This is in line with the idea of securing more diversified sources of finance.

The fundamental question is how to raise the funding to live up to the tasks society is setting. It seems to be very difficult for universities to re-allocate resources unless the situation is life-threatening, as was the case in Twente. The Rostock case is somewhat similar in that the university had an obvious task to solve in relation to the region it is part of, and because it is evident that the Triple Helix efforts mobilised on the fringes of the university have led to an influx of funds, which approximates the entrepreneurial university.

The networks examined in the UK and Sweden are both examples of a pooling of resources, but with the marked difference that the Swedish network rests on expectations of cross-institutional programmes to emerge and a mix of participants; this seems to cause some bureaucratic and organisational problems. By contrast, in the English network’s resource pool, the development of knowledge, ideas for training and similar initiatives in the region are shared via the universities, and they have the money to carry out activities. In addition it is possible to create a pool of competences to rely on in an “open budget-balanced market” for training and education in enterprise initiatives – including entrepreneurship.

However, there seem to be few signs in the network organisation that the individual universities participating have changed their own profile, even though it is expected to happen over time, among other things due to the research groups legitimising participation in the network. It seems natural to expect that the work in the networks involving the researchers and teachers of the institutions will lead to groups increasing initiatives in this field, alone because of the larger critical mass created. A clear conclusion to be drawn, however, seems to be that networks based on own resources

and jointly provided funds allocated based on qualified applications, such as Mercia, tend to commit and develop the individual participants more strongly than a network like the SSES, which, backed by external funding, established a common external unit, to be used or not used by the participants depending on their own comparative strength in the field.

Working in an external network can be a problem, in that they can be forced to reduce or close down at the day the external funding is no longer available, and the institutions participating in the network have failed to spend any of their own resources on investment and thus launched a lasting development. In this case, nothing much will have been achieved. Building up networks and pooling resources can be problematic unless the external funding is spent developing the basis of lasting changes in the participants' internal community as well.

2.9. CONCLUSION.

The development from "ivory tower" to the extended understanding, which we have here referred to as the "entrepreneurial university", has much wider implications than merely establishing courses in entrepreneurship. Such activities are manifestations of education developments. In such an understanding, research will imply close relations with or direct involvement in local, regional or national developments, serving to create increased prosperity and give the university as an institution a different place in society.

This project has been described as an explorative study, as the four cases have provided the basis for exploring a field that is considerably more comprehensive and complex than it has been possible to demonstrate in the case descriptions. It would, for instance, take resources of a very different magnitude to expose the internal structures and processes, not to mention attempt to define the content and importance of the teacher role.

The cases have described a number of ways and methods used, based on the particular regional circumstances and rooted in the cultural and historical backgrounds of each university. They serve as examples of attempts to tackle the same general development in society in different ways. The four cases represent only a small sample of European development. Global development and the demands for commercialisation of knowledge production and for innovation of the value-creating sectors of society call for new orientations, which will require the dismantling of many of the present structures. New structures will have to be established to replace them,

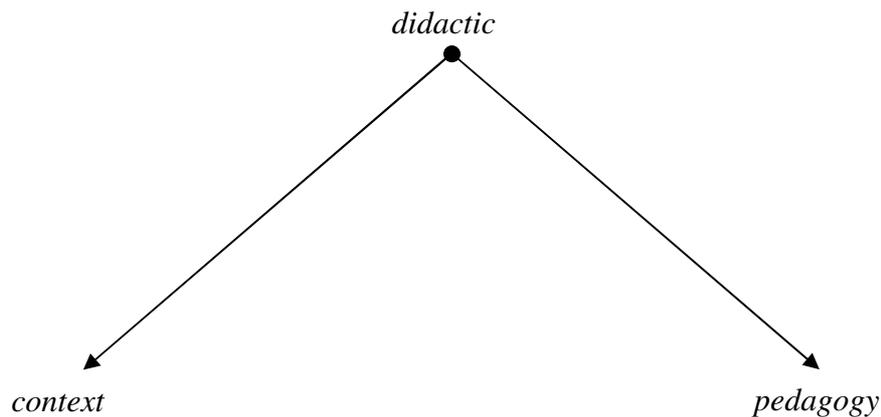
among other things involving the Triple Helix line of thinking and “the entrepreneurial university”. These new structures must be able to further research and education, and create teacher roles, which lay the foundation of “enterprising behaviour” in the graduates of the future, within all subjects, and for the benefit and advancement of a society in a knowledge-based global economy.

CHAPTER 3.

THE DIDACTIC CHALLENGES.

The introductory chapter provided an outline of the issues dealt with in this report – including the presentation of a series of fundamental problem statements as to the capacity of the educational system with respect to promoting entrepreneurship by developing more enterprising students. The surfacing questions and criticism suggest that it is feasible to improve the universities' approach to entrepreneurship teaching as compared with currently existing procedures – not only is it feasible, it may even be within reach.

Figure 6. An entrepreneurial didactic claim changes in pedagogy and context.



Further, the previous chapter's discussion of the correlation between the university system and its community explicated the need for changes in the interaction between the university and the surrounding world in order that this potential be exploited. Didactical challenges cannot, as shown in figure 6, be seen as isolated from changes in context and pedagogy. This chapter focuses on the question of didactics in entrepreneurship education: didactics in relation to target groups, objectives and contents of the teaching. As previously indicated, the ideal interrelation between target groups, teaching objectives, contents of teaching and forms of teaching on the one hand, and the emergence of enterprising behaviour and entrepreneurship on the other, is a long way from being well-mapped or clarified. The underlying thesis of this chapter is that – in some degree or other – society is in a position to facilitate enterprising behaviour and entrepreneurship through the educa-

tional system. The next question, engendered by this hypothesis, is how a subject field as entrepreneurship could and should be integrated into university education. However, this hypothesis carries further implications which ought to be briefly touched upon. Firstly, there is the question whether entrepreneurship can be departmentalised into a separate subject matter distinct from other kinds of academic content; secondly to what extent entrepreneurship can be learned or taught; and thirdly, whether there are social, cultural, economic or political reasons for the development of such education in a university context (Koch 2003). This third and final issue has been treated in the preceding chapters, and hence this chapter intends to offer a brief investigation into the first two questions – viz. the differences between entrepreneurship and other disciplines and the problems associated with the development of an entrepreneurship education – before proceeding with a more systematic classification of the issues of target groups and educational objectives -and content in relation to entrepreneurship education.

3.1. THE POSITION OF ENTREPRENEURSHIP TEACHING IN THE UNIVERSITY SYSTEM.

In principle, entrepreneurship teaching could be envisaged as constituting an element of practically any subject course in a university context. In recent years we have thus experienced a considerable focus on pairing entrepreneurship teaching with subjects within the natural, medical -and technical sciences – the basic premise being that this would be a means to both swifter and more efficient dissemination of the inventions emanating from these disciplines and, consequently, an innovative commercialisation which again would entail social growth. The accompanying textbox shows an example of a university adhering to this philosophy.

Likewise, it seems entirely plausible that – in a knowledge -and experience-oriented society – there would be a similarly rich potential for the exploitation of innovative thinking within the realm of the humanities, e.g. within linguistics and aesthetics, as a basis for commercial innovation.

Box 11.

In the early eighties the executive board of Twente University in the Netherlands decided to launch a transformation process: from being a university with only a regional profile and a relatively narrow focus on engineering, their aim was to enhance the scope and become a national university with the prime objectives of being innovatively and entrepreneurially focused.

There is, however, a special tie between entrepreneurship teaching and the field of economics and management. Entrepreneurship is predominantly in the care of teachers attached to the university departments of economics or management, and at business schools the subject usually enters as an element of the general course content. There are historical reasons – departmental as theoretical – for this. Thus, the first individual programmes in entrepreneurship are offered by American business schools like for instance Harvard as early as 1947. From 1953 New York University offers courses headed by Peter Drucker, and in 1968 Babson College introduces the first comprehensive bachelor education in entrepreneurship. Today this development has become so widespread that any business school curriculum incorporates some measure of entrepreneurship subjects (Katz 2003; Koch 2003). The emerging trend is not only towards proliferation at increasingly more business schools, as there is also a tendency towards a development from offering few, separate subjects to offering a wide range of comprehensive entrepreneurship subjects which, when combined, constitute an entire education.

The reasons for the predominant position of business/managerial economics within entrepreneurship teaching are further founded in the history of theories. The concept of entrepreneurship has its origin in the philosophy of economics, and hence economists are often considered to be best suited for teaching entrepreneurship theory. Besides, entrepreneurship is traditionally about business start-up and development; and, contentwise, this subject area constitutes an area of core content in the discipline of management.

In the following we shall therefore take our point of departure in entrepreneurship teaching as it typically occurs, viz. based on economic -and management theories. This does not imply, however, that we do not find teaching in entrepreneurship important or relevant within a much wider range of university disciplines – within every discipline, in fact! We shall return to this topic in our analysis of objectives and target groups for entrepreneur-oriented teaching at the end of this chapter.

3.2. CONVENTIONAL TEACHING AND ENTREPRENEURSHIP TEACHING.

The main body of subject fields in business economics is characterised by the existence of socially accepted norms and conventions for how the teaching should be organised. This is for instance true for a subject area as marketing management where there is a basic template for the teaching procedure. You set out with customer/competitor behavioural theory, and –

on this basis – work with market segmentation; with strategies and positioning; and, finally, you conclude with a study of the parametric theory of marketing tools – or the four P’s. Similarly, the existence of a literary canon – comprising selected authors as for example Lewitt, Alderson, Howard & Shet, Webster & Wind, Bagozzi, Abell, Day, Porter and Kotler – constitutes the primary basis of the subject matter. The authors in question are, to a certain extent, standing on the intellectual shoulders of each other, as it were, and thus shape the all-round education mandatory for any marketing theorist who wants to be part of the circle. The theoretical contribution from these authors further constitutes the core content of the fundamental template for the teaching strategy outlined above. This is not to say that there can be no professional disagreement within this field; but, for the most part, differences occur at the perimeter of the field – which is in fact precisely where the positioning relative to the prevalent conception of mainstream marketing takes place. This basic philosophy of marketing teaching is shared in most of the world.

Similarly well-ordered conditions are found within practically every other subject area in management such as e.g. organisation, accounting, or finance – but not within entrepreneurship, however. On the contrary, our studies – literature as cases (Blenker et al. 2004b; Blenker et al. 2005a) – seem to show a remarkably heterogeneous representation of the entrepreneurship teaching forms practicable. In line with other university programmes, we find a range of conventionally structured courses – e.g. traditional programmes within economics and business administration such as marketing, finance and accounting. They are frequently designed with particular reference to issues pertaining to the starting up of own businesses; and, also, they often include programmes on the history of entrepreneurship theory including a study of the classic contributors: Schumpeter (1939), McClelland (1961) and Kirzner (1973, 1997). As further examples we could mention traditional courses in business planning comprising teaching in the procedures for working out a business plan – a kind of how-to-do-it programmes; there could also be linkage to written assignments where e.g. the final thesis takes the form of a business plan. In addition to this, such courses are often linked with participation in various kinds of business plan competition.

Yet an archetypical trait is the project-based group work which may be aimed at various topics within the area of starting your own business such as for instance ideas generation, opportunity identification or the establishment of a business concept. Furthermore, several universities have established various kinds of support for students who wish to start their own

business. This may be in the shape of facilitating the physical framework for project jobs; in the shape of scholarships facilitating the development of a business concept; or in the shape of incubator communities bringing together similarly disposed students and offering them an opportunity to draw on shared resources and counselling which may assist the business start-up process. Finally, some of the educational activities are directed towards the personal development of the students. Thus, a range of coaching-oriented activities are aimed at developing students' imaginative abilities, enterprising competence and capacity for entrepreneurial behaviour; and, likewise, there is an attempt to augment the student's ability to handle diversity and complexity in his community. The delineation above demonstrates how entrepreneurship-oriented educational activities in Europe are characterised by heterogeneity and confusion. The reasons for this diversity is to a great extent to be found in the fact that there is no unanimous agreement as to what should define an entrepreneur or entrepreneurship. This, of course, entails a variety of opinions as to what and how to teach, or how the learning processes are best planned (Garavan 1994.1: 4; Gibb 2002: 238). This bewilderment and the ensuing scarcity in recommendations to teachers and decision-makers may also entail a misapplication of resources (Gibb 2002: 239).

In the following we shall attempt to present an exposition of this plurality in two discussions: one discussion will be about what would constitute the ideal theoretical basis for entrepreneurship education; and here we juxtapose the prevalent management-inspired approach with an entrepreneurship theoretical alternative. The second discussion will treat the issues of target groups and teaching objectives while juxtaposing the prevailing choice between students of business and management and students of the technical- and natural sciences with considerations of how to choose a more comprehensive target group for the education.

3.3. THEORIES IN ENTREPRENEURSHIP EDUCATION – FORMATION AND BACKGROUND.

When examining entrepreneurship education theories from all over the world, there seems – as we suggested above – to be two principal schools of thought, and each seems to have their own particular range of sub-disciplines and approaches. Since a major part of entrepreneurship teaching takes place within the economics and management educations and thus at business schools or at business school-like university departments it is not surprising that a considerable part of the entrepreneurship course content is

founded on conventional management philosophies. What is more surprising, however, is the fact that even though entrepreneurship research has now been carried out for almost a century and, during the last forty years, has gained a substantial foothold in the research communities, this research tradition has not left as significant traces in the entrepreneurship teaching practices as is the case in management approach. In the following we shall subject the core content of the two traditions – management and entrepreneurship – to a closer study and examine how each has been sought realised – or not – in entrepreneurship education.

3.3.1. Management theory.

Management theory is a many-headed monster containing a variety of different approaches and sub-disciplines. Hence it can be problematic to apply the same yardstick to subject fields such as strategic management, marketing, organisational development, accounting and financing.

Nevertheless, it may be justifiable to maintain that the common denominator for a great many of these disciplines is the unifying factor consisting of a rational *planning process* measured against an analysis of the *enterprise* and its *community*. The rational planning process is typically expressed in various kinds of stage models illustrating how a business management as decision-maker runs through a series of stages and hereby gradually determines the issues, gathers relevant information, analyses the information obtained, makes a decision intending to subject the decisions made to subsequent continuous evaluation.

The planning process is closely connected with the analysis of the business and its environment – frequently expressed in the well-known SW-OT structure based on the idea originating in the theory of microeconomics that the business should seek to reach a “fit” between its internal and external conditions. The internal analysis (SW) may be based on a varying range of theoretical formation such as e.g. sociologically-based organisation theory or microeconomic resource-based theory. Similarly, the external analysis (OT) may be based on e.g. psychologically or sociologically-based marketing theory, on the microeconomic theory of “industrial organisation”, or on theories industry.

When institutions and teachers accustomed to thinking along such managerial lines embark on a new area of teaching, they will quite naturally bring their habitual way of thinking to the new area. Thus, entrepreneurs are often considered from a conceptual and theoretical angle corresponding to the

perspective applied towards existing businesses. Consequently – from this point of view, that is, the entrepreneur should, like an existing enterprise, analyse environmental potentials and threats, compare the results with his own strengths and weaknesses and then, on this basis, present a *plan* putting him in a position to fulfil the potential and meet the threats – to utilise his strengths and beware of his weaknesses.

In the following we shall examine more closely how exactly this management ideal has been transferred to entrepreneurship education. To begin with we shall try out a loyal acceptance of a conversion of the management ideal to the entrepreneur phenomenon; but it is of course a question whether such a transposition is at all adequate. However, this is an issue which will be taken up later on. *Box 12.*

3.3.1.1. Strategic planning and business plan.

In conventional management theory normative behavioural structures are usually expressed in rational decision-making models. It has been a widespread presentation form to express the rational planning process in a normative stage model recommending the procedure a rational decision-maker should comply with in order to reach the optimal decision.

Stage models may vary according to subject field, but typically they consist of the following elements: problem recognition, problem description, determining the need for information, information retrieval, information analysis, listing action alternatives, evaluation of consequences, decision, implementation and evaluation. The content of many entrepreneurship courses - and textbooks are centred on the business plan. Needless to say, the

- Description of business area
 - the new business concept
 - the line of business
 - the objectives of the business
 - the uniqueness of the service
- Description of the management team
 - who are the team members
 - legal and economic structures
 - associates – the board, consultants, lawyers
- Description of the market segment
 - target segment
 - size and development of the market
 - competitive analysis
 - market share estimate
- Marketing plan
 - overall strategy
 - price, distribution, sales
 - advertising and promotion
- Business system and organisation
 - production facilities
 - supplier relations
 - employees
 - costs
- Implementation and risk assessment
 - potential problems
 - obstacles and risks
 - alternative developments
- Financing
 - forecasts and budget
 - earnings and cash flow
 - break-even and cost control

various suggestions for the construction of a business plan differ; but nevertheless the elements shown in box 12, are a majority of the many bids for how a business plan should be structured:

There is a striking resemblance to the stage models of management theory. In both cases the underlying framework is rooted in the theory of rational decision-making, and an obvious conclusion would be that since entrepreneurship education is often in the care of teachers from management they have – with minor adaptations – transferred their basic theoretical capacities to entrepreneurship teaching.

3.3.1.2. Analysing the environment and identifying entrepreneurial opportunities.

The OT-analysis of the environment is an essential part of the conventional management theory's SW-OT analysis. Traditionally this consists of an introductory analysis of the macro structures surrounding the firm e.g. by means of a so-called PEST analysis examining the **p**olitical, **e**conomic, **s**ocial and **t**echnological environment. This is followed by an analysis of the micro structures surrounding the firm e.g. by means of the much favoured Five-Forces analysis examining suppliers, customers, substitutes, entrants, and rivalling among competitors.

Likewise, a substantial part of textbooks on entrepreneurship are dedicated to this environmental analysis. This is seen in titles as “Environmental assessment, Preparation for a new venture” or “Marketing Research for new Ventures” (Kurato & Hodgetts). However, books like these suffer from overgeneralisations, and it is therefore difficult for potential entrepreneurs to envisage new possibilities on the basis of such general readings. As a consequence, several institutions are offering more context-specific courses so as to provide an insight into the opportunities within certain business or technology areas. The examples in the accompanying textbox illustrate titles of programmes thus directed towards specific kinds of entrepreneurship within specific environment.

The central problem of the course content listed above lies in the interpretation of the entrepreneurial opportunities which form the basis for this approach. Opportunities are primarily seen as an objectively

Box 13.

- E-Entrepreneurship Birmingham.
- ICT Entrepreneurship.
- Social Innovation and Entrepreneurship.
- Design & Entrepreneurship.
- Concepts in BioEntrepreneurship.

given thing – something lying “out there” and hence something that can be logically and analytically reasoned out. The problem with opportunities is that they may not “be” – not yet at least; and science prefers to avoid dealing with the non-existent. Thus, it is difficult to explicate opportunities by the prevailing means-end rationalisation. This does not signify that a large number of business managerial theories and models cannot be used to uncover aspects of the new opportunities. Market analyses definitely reveal whether imagined products will match existing customer needs; creativity-enhancing exercises may improve students’ capacity for thinking innovatively; just like Andrews’s (1971) classic SW-OT analysis may contribute to a construction linking the opportunity aspect to other facets of business strategies. But it is difficult to propose an actual theory of possibility recognition – and especially a normative theory (Blenker 1996). This seems to be contradictory to the very nature of opportunities, in so far as opportunities – being available for everyone – cannot be more opportune for some than for others. Hence it is necessary to proceed on the premise that an opportunity always contains a specific content – such as certain supply and demand parameters – fixed in a certain time and space universe (Abell 1978, 1980; Dimov 2003). Alternatively, much – new as classical – entrepreneurship research stresses that entrepreneurial opportunities occur precisely as interactions (enactments) between the individual and the surroundings (Gartner, Carter & Hills 2003; DeTienne & Chandler 2004). Thus, the concept “opportunity enactment” comprises an understanding of opportunities as something emerging from an entrepreneur’s or a business’s sense-making process e.g. as a consequence of changes occurring in the business, in the life of the entrepreneur or in his surroundings (Blenker 2005).

3.3.1.3. Functional specialisation and entrepreneurial competence.

Most management teaching is based on a classical functional specialisation of the firm. Thus, in addition to the classical subsidiary programmes as economic science, law, statistics and IT, a majority of business schools offer hardcore management subjects as accounting, finance, organisation and marketing. This pattern, too, is repeated in much entrepreneurship teaching. The accompanying box 14 illustrates how, at UCE in Birmingham, the major part of the second term of the MSc entrepreneurship education is dedicated to subject fields rooted in classical business functional specialisation of the firm.

Box 14.

Here a substantial part of the underlying philosophy seems to be almost directly transferred from traditional management disciplines although the teaching has probably been added a “twist of entrepreneurship”. It would, however, be justifiable to probe the advisability of transposing conventional management thinking to entrepreneurship. If the education is aimed at

Examples of functional specialisation based programmes at the UCE, Birmingham entrepreneurship education:

- Raising Capital & Marketing for Innovation.
- Organisational Learning, Training & Enterprise Development.
- Entrepreneurial Finance & Risk Management.

enabling students to handle the very situation of entrepreneurship – a situation characterised by the *pro*-creation of a business not yet created – then it is not a question of the management of a business; rather, it is a question of opportunities to be pursued, and – in particular – it is *not* a question of functional specialisation. This does not enter the picture until much later. When discussing small business management, this is normally a question of one owner/manager taking care of a wide range of functions not in any way specialised.

3.3.1.4. A critical investigation of the managerial approach to entrepreneurship education.

As can be seen above, the accomplishment of consistent entrepreneurship teaching based on management theory is *feasible*. Thus we recognise the main idea outlined above – or fundamental elements thereof – in the cases studied in connection with this report. Studying entrepreneurship teaching from a wider perspective – i.e. on a global basis – also seems to confirm the managerial approach as being most prevalent. Albeit feasible and prevalent, there is no evidence that this approach should necessarily be the *most advantageous*. A transposition of normative implications from one subject field – viz. the management discipline, to another – viz. the entrepreneur phenomenon, has been attempted and this, apparently, without thoroughly deliberating whether it is at all suitable for this new area. And there is much to indicate that it is not particularly well-suited (Blenker 2001). The management discipline itself was inspired by the philosophy of microeconomics which is aimed at optimising known resources in relation to existing opportunities. The management discipline has primarily utilised this idea in the development of frameworks for understanding the governance of already existing companies. You might, however, claim that the entrepreneur

situation is the reverse: this is about pursuing new opportunities regardless of given resources. The management discipline as the starting points for the development of entrepreneurship education would not present much of a problem had it not been so predominant as to obstruct the development of other approaches. Polemically expressed it might be claimed that the young cuckoo has almost ousted the rightful inhabitant's eggs from the nest, as it were. In the following we shall subject the – if not rightful then at least original inhabitant – the entrepreneurship theory to a closer examination and look into some of the problems it has been up against in the attempt to secure itself a fecund position within entrepreneurship teaching.

3.3.2. Entrepreneurship theory.

As demonstrated above, a majority of the elements in entrepreneurship teaching have been inspired by management theory. Alongside these programmes there are a further range of courses resting on entirely different foundations. Thus a series of entrepreneurship-oriented teaching programmes offer courses in the history of entrepreneurial theory e.g. by outlining classics as Schumpeter (1939), McClelland (1961) and Kirzner (1973, 1994) or by introducing the students to more recently developed theories of entrepreneurship. In these instances the basic course content is typically centred on three elements: Schumpeter and the Austrian School of Economics, McClelland and the personal-traits-theory, and on an introduction to modern entrepreneurship theory as for instance the current focus on opportunity recognition as a central aspect of understanding entrepreneurship.

Thus the first part of the courses considers the entrepreneur – in line with Schumpeter and the Austrians – as the most central player in the economic system: as the bearer of societal innovation. Entrepreneurial innovation is construed as improvement in products, processes or organisational structures. The entrepreneur creates dis-equilibrium in the economic system causing the “creative destruction” of innovation. According to the Austrians the entrepreneur has a special insight into the workings of the economic system – an alertness – enabling him to detect opportunities in the economic system before anyone else. Opportunities realised by the entrepreneur by providing and combining resources in novel ways. The fulfilment of this role presupposes special perspicacity and a creative aptitude (Kirzner 1994).

Springing mainly from psychology and sociology (from e.g. Weber and McClelland), the personal-trait-theory pursues these personal aptitudes

more closely. Most classically, the entrepreneur is characterised by a special need for achievement; but this characterisation has later been supplied with a wide range of other psychological or sociological descriptions of the entrepreneur's personal traits. This approach is also revealed in course titles as e.g. "forms and typologies of entrepreneurship".

More contemporary entrepreneur theory is especially focused on the relationship between the entrepreneur and opportunity embedded situations – attempting to uncover more precisely how entrepreneurs perceive or create opportunities. In an article – later to become a landmark – Shane and Venkataraman (2000) lay down entrepreneurship as: "...*the nexus of two phenomena: the presence of lucrative opportunities and the presence of enterprising individuals*" (Shane & Venkataraman 2000: 218). The shift in focus – returning to entrepreneurship as a potential source of enrichment to strategy- and marketing theories – may be owing to the fact that entrepreneurship focuses on situations where specific resources or patterns of action are not given in advance. Historically, entrepreneurship theory has been about the conception and birth of an enterprise. This birth taking place in an economic "no man's land" is precisely why the possibility to study a specific kind of innovative or opportunity seeking behaviour arises. In this situation the players' opportunities are not limited beforehand, and the entrepreneur – not being bound by conventional firms' irreversible costs, bureaucracy, inflexible organisational structures, and well-established action patterns – has a unique degree of freedom (Duus 1997). This situation leaves the entrepreneur not only *free from* these definite limitations, but also *free to* think innovatively and free for innovation.

The general management and strategy theories' increased interest in studying the entrepreneur's way of conceiving new business concepts thus seems to be founded in a desire to obtain the key to the "black box" of innovation (Blenker 1994, 2005). Thus, modern entrepreneurship theory focuses specifically on the relations between the entrepreneur and situations presenting opportunities – for purposes of identifying more precisely how entrepreneurs see or create opportunities. In this way, the interaction between the individual and opportunity has to an increased extent come to be seen as the corner stone of entrepreneurial theory. In this connection, possibility identification often refers to situations where the entrepreneur, precisely because of his unique information sensitivity, is capable of detecting opportunities even though he does not actively seek those (Eckhardt & Shane 2003). Part of the explanation for this may be found in the circumstance that opportunity information mainly consists of tacit knowledge not evenly distributed in the market. The entrepreneur's aptitude for detecting oppor-

tunities may therefore well originate in his specific knowledge but also in his unique capacity for enhancing his own knowledge (Blenker 2005).

3.3.3. Management –or entrepreneurial theory as a basis for teaching?

As demonstrated above there is a wide range of well-developed theoretical framework concerned with entrepreneurship. This theory is applied in entrepreneurship teaching – typically in courses entitled e.g. “theories of entrepreneurship” or, for more recent theories, “contemporary issues in entrepreneurship”. It does give food for thought, however, that entrepreneurship theories are primarily dealt with in subject fields *about* entrepreneurship, whereas – as described previously – the more management influenced subjects are predominant when it comes to education *in* entrepreneurship. The reason for this is that, to too great an extent, entrepreneurship research is descriptive.

Box 15.

- 1) How do entrepreneurs detect economically lucrative opportunities overlooked by others?
 - a) Informational economics
 - b) Theory of decision-making
- 2) How do entrepreneurs identify the most attractive lines of business?
 - a) Industrial organisation economics
 - b) The Austrian School
 - c) Game theory
- 3) How do entrepreneurs acquire the resources needed to start up an entirely new business?
 - a) Agency theory
 - b) Procedural Justice Theory
 - c) Transaction Cost Economics
 - d) Social Embeddedness Theory
- 4) How do entrepreneurs create a competitive advantage?
 - a) Resource-based theory
 - b) Hypercompetition

Inspired by Fiet (2000a: 13-17).

A desire for increased theoretically-based teaching *in* entrepreneurship would, however, presuppose a description of the types of theory needed; and also it would be necessary to determine how to expand existing research (Fiet 2000a). In relation to this issue we can identify two main attitudes. On the one hand it can be argued, as above, that the action-related part of entrepreneurship teaching should include more theory, for instance by combining entrepreneur -and management theory (Fiet 2000a) – as ex-

emplified in accompanying textbox. The point of departure is four basic questions, and it could be argued that the “answers” might be useful to the potential entrepreneur. The four questions are linked with a combination of management -and entrepreneurship theory.

In opposition to this point of view there is, however, another view construing entrepreneurial action as something more similar to artistic creation: *“Entrepreneurial creation appears to share a great deal with artistic production and might well be thought of as an economic art form”* (Jack 1999: 113). This perception tones down the analytical approach and replaces it by a preference for action (Gibb 2002). The problem in this connection is that theory cannot predict the outcome of different entrepreneurial actions: *“(…) the art, the very nub of entrepreneurship of creation and of innovation, does not appear to be so amenable to teaching. (…) As academics we have to accept that we cannot directly provide or teach this skill – it is fundamentally experiential”*. In this situation the potential entrepreneur may perhaps need theory to underpin the practical learning process; but regular normative theories are out of the question – as it will be equally meaningless to draw in so-called relevant theories from the literature on micro economics as those shown in the text box above.

The problem may be defined as shown in table 2 the theories underlying teaching *in* entrepreneurship originate in a world (economics and management) not really concerned with the entrepreneur.

Table 2. Summing up the discussion about management, entrepreneurship and teaching principles.

Theoretical Premise Educational Objectives	<i>Management Theory</i>	<i>Entrepreneurship Theory</i>
Knowledge about entrepreneurship	Traditional management theory primarily deals with the management and development of existing businesses, where-as very little is said about the emergence of new ones or about the identification of entrepreneurial opportunities.	Entrepreneurial theory is well-developed and richly applied in courses about entrepreneurship, but frequently offers only a meagre normative or prospective outlook for the individual student.
Competence in entrepreneurship	Management theory is richly applied in various forms of entrepreneurship education. It can, however, be questioned whether the theories are at all well-suited for the entrepreneurial situation.	Apparently, the great challenge lies in a continued development of entrepreneurship theory directed towards normative and procedural usability in the teaching.

Although most teaching programmes in entrepreneurship encompass courses in genuine entrepreneurship theory (e.g. introductions to the classical theory), the transformation of this fertile and versatile set of entrepreneurship theory formations into cohesive and consistent entrepreneurship teaching has been relatively scarce. It is, apparently, difficult to transform the analytical observations of entrepreneurship theories into a normatively-oriented teaching – or into process procedures with forward-looking perspectives that may be to the students' advantage.

3.4. TEACHING OBJECTIVES: ENTERPRISING BEHAVIOUR OR ENTREPRENEURSHIP?

Choosing management philosophy as the main vehicle gives rise to one weighty problem: the students will be equipped with management tools even before they have something to manage. Admittedly, the entrepreneur theory based on the more varied opportunity analysis of the Austrians will probably not be worth much until the students begin to perceive opportunities on their own. When that occurs, however, i.e. when the students have reached a stage where they begin to see opportunities, then it seems very likely that a revised edition of the Austrian philosophy might enter into the process – precisely to refine and clarify the students' own ideas about the opportunities they have spotted. And only at the final stage – when opportunity identification has taken place – does management thinking enter into the picture so as to further explicate how the pursued opportunities may be realised.

In an elaboration of this discussion, the issue of target groups and teaching objectives should also be taken into consideration: the prevalent target groups – students of business/managerial economics and natural -and technical sciences – should be measured against alternatives embracing a wider target group for the teaching.

The two predominant target groups for entrepreneurship teaching seem to be, on the one hand, students of economics and management offered the opportunity to incorporate entrepreneurship elements into their ordinary study programme; and, on the other hand, students of the natural -or technical sciences often provided with an entrepreneurship element towards the end of their study. In both cases it is hoped that this teaching will enable the students – when educated – to either establish a new enterprise based, for instance, on the knowledge acquired from the natural scientific part of the education; or – for the management students – contribute to an in-

creased innovative development in their future employment in existing firms. In both cases, the entrepreneurship concept is taken in the relatively narrow sense, namely seen as an attribute to the future commercial activities meant to take place when the student is fully educated. In the following, however, we intend to discuss whether it would be expedient that certain types of entrepreneurship teaching widen their perspective to embrace more than the commercial angle. This seems especially pertinent in this connection – the essential issue being how we as society and educational system may prepare the ground for the development of people having the necessary attitude, competence and behaviour for contributing innovatively to societal development. It is thus possible to separate the concepts “entrepreneurship education” and “enterprising education” (Garavan 1994.1). In North America they primarily use the term “entrepreneurship education” while in Great Britain and Ireland the preferred term is “enterprise education”. It is more than just a random, geographical difference – it is about different perceptions of educational goals: *“The major objectives of enterprise education are to develop enterprising people and inculcate an attitude of self-reliance using appropriate learning processes. Entrepreneurship education and training programmes are aimed directly at stimulating entrepreneurship which may be defined as independent small business ownership or the development of opportunity-seeking managers within companies.”* (Garavan 1994.1: 4).

It is thus possible to imagine an alternative and considerably wider approach to students’ behavioural training. The more wide-ranging concept “enterprising behaviour” (Gibb 2002) refers to the more general innovative and enterprising qualities in the individual. It could, moreover, be advantageous to differentiate between entrepreneurs and small business owners (Garavan 1994.1). Entrepreneurs are characterised by innovative behaviour, strategic management and by having profit and growth as their prime objective. Small business owners are people who spend most of their (working) time at their place of business, and most of their income originates from this business. The latter difference indicates that the educational needs of the two groups are very dissimilar; and, generally, the label “entrepreneurship education” has become a bit inflated, as it were, because many of the courses aimed at small business owners are put forward as entrepreneurship education (Garavan 1994.1).

Thus, the entrepreneur concept focuses on the behaviour causing a person to establish an enterprise (alone or together with others), and it also signifies that this is done for commercial purposes. Likewise, the concepts intrapreneurship or corporate entrepreneurship signify an individual, innova-

tive behaviour within existing organisations – also for commercial purposes (Kjeldsen 1991, 2002). Beyond these meanings we have the umbrella term “enterprising behaviour”, in the sense of a positive, flexible and proactive attitude towards change. Thus, both entrepreneurship and intrapreneurship are business-related which need not necessarily be the case for enterprising behaviour. Hence the enterprising behaviour concept denotes a wider meaning than does the entrepreneurship concept. The enterprising behaviour concept may refer to an individual, to a group, to an organisation or to a society but need not involve any commercial aspect. The personal traits characterising enterprising behaviour are, according to Gibb (1987: 6):

”initiative, strong persuasive power, moderate rather than high risk-taking, flexibility, creativity, independence/autonomy, need for achievement, imagination, high internal beliefs of control, leadership and hard work”.

Basically the concepts focus on initiative power and venturesome attitudes as competences and special faculties expressed in a person’s innovative behaviour. This kind of behaviour may find its expression in many different contexts and organisations. Since an organisation can be designed to either limit, prevent or promote enterprising behaviour, a central educational task will be to learn how to create new structures, networks and alliances in order to manage increasingly complex stakeholder relations. Thus individual enterprising behaviour *Box 16.*

will often be insufficient unless certain supportive contextual conditions are met. To encourage enterprising behaviour through the educational system it is therefore essential to teach students how to handle such behaviour, to reward it, and to assist in linking it to a macro level (Gibb 2002). The accompanying textbox presents an outline of the skills that should be encouraged when the aim is to educate for enterprising behaviour.

The idea behind such an extension of target groups and objectives of educational activities is to reach the students at the relevant stage. While the students are students they should not necessarily learn to

Gibb’s outline of enterprising skills – suggesting key elements in the development of curricular content:

- Manage the entrepreneurial life world.
- Design and cope with entrepreneurial governance systems.
- Develop global sensitivity in the organization.
- Design, introduce and manage business development processes.
- Actively pursue stakeholder relationship management learning.
- Pursue flexible strategic orientation.
- Develop personal enterprising capacities.
- Pursue entrepreneurial learning.
- Personalize global information sources.

(Gibb 2002: 247)

start their own business; but they should, however, learn to think innovatively – learn to see opportunities. From this point of view, the educational objective becomes a question of stimulating, developing and training some of these capacities. Enterprising behaviour may appear in many different contexts, organisations and job specifications – not only in connection with starting up a business. Organisations may be structured to either limit, prevent or encourage enterprising behaviour, and hence it is important for employees to learn how to create structures, networks and alliances suitable for the realisation of enterprising behaviour. The challenge here lies in designing educational programmes aimed at teaching people how to tackle, create – and perhaps even to thrive on – uncertainty and complexity (Gibb 2002). However, the implementation of such an all embracing approach would presumably require the application of entirely different theories and methodology.

Within both enterprising behaviour philosophy and entrepreneurship theory there have – as mentioned in connection with the personal traits tradition – been attempts at establishing theoretical as well as empirical explanations of why it is that some people exhibit more entrepreneurial behaviour than others. These descriptions and explanations derive from psychology, sociology, socio-psychology, innovation theory, economics and from various management theories. Comparing studies aimed at identifying – on a theoretical or empirical basis – particular skills or competences underlying enterprising behaviour we find a distinct overlap into the emergent theory of change agents and change management. Thus, in “The Expertise of the Change Agent” Buchanan and Boddy (1992) reveal a number of typical traits in the change agent quite similar to those characterising enterprising behaviour. In recent years the insight into this behaviour has been linked to the role of the educational system. Thus, there has been an attempt to design theoretically and conceptually-based models as well as empirically-based frameworks for developing entrepreneurial behaviour by means of the educational system. In those countries where higher educational institutions have made a conscious decision to approach this issue, they thus seek to supplement academic knowledge with course elements focused on the development of personal competence and behaviour such as e.g.:

“communication skills, group-work skills, personal skills, organisational skills, interpersonal skills, problem-solving, social and community awareness, resource management skills” (Bridge et al. 2003: 28).

The purpose of these programmes is to awaken, develop and train some of the student abilities considered to be enterprising or entrepreneurial. A great many of these abilities are presumably of a social nature; and thus

enterprising behaviour is seen as a social process rather than an individual phenomenon. A process that – albeit possibly initiated by an alert individual – often requires the establishment of a team based on personal networks for the identified opportunity to be put into action (Johannisson 2002:20). In the light of this, there is much to indicate that entrepreneurship teaching as we know it is overly focused on the individual (Laukkanen 1998).

3.5. OBJECTIVES OF ENTREPRENEURSHIP TEACHING.

Since there is no clear-cut definition of the entrepreneurship concept, it naturally follows that there is no unequivocal consensus on what should be the objectives of the teaching or learning processes or, for that matter, what the concrete study programmes should aim at. There are many educational programmes with no explicit goals, though. But in the following we shall however attempt to outline a number of suggestions for purposes and objectives alike.

Satisfying stakeholder expectations and desires is one evident approach to entrepreneurship educational purposes. Three main groups of stakeholders are immediately identifiable – namely society, business community and – last but not least – the student themselves (Jack 1999: 110). However, stakeholder expectations and desires with respect to educational outcomes differ widely:

- *Societal* interest – usually expressed by governmental and public decision-making bodies – is primarily focussed on improving or at least maintaining national economic conditions. The basic principle being that augmented entrepreneurship expressed in more innovative businesses should equal increased economic activity and job creation. In addition, innovation is in itself a significant factor in future economic growth, and hence it could be argued that reinforcing the wider concept of enterprising behaviour would be beneficial to society. Also, it could be argued that in addition to reinforcing teaching *in* entrepreneurship the public sector would benefit from a dissemination of knowledge *about* entrepreneurship in order that civil servants be better equipped to facilitate entrepreneurial processes in society.
- Desires in *the business community* are directed towards targeting a wider range of students – besides students of economics and management – in order to mediate a basic commercial insight. Further, a reinforcement of the wider approach to enterprising behaviour is in the interest of the business community as it may entail a creative atti-

tude to the work and, consequently, enhanced potential for intrapreneurship in existing firms.

- *Students'* interests are largely rooted in public and commercial interests. An education boosting their capacity for enterprising behaviour may facilitate a career in a fairly large private business; and in the same manner knowledge about entrepreneurship may entail improved job opportunities in the public sector. Many students, however, enrol in an entrepreneurship study programme for purposes of realising a desire for perhaps later in life to start up their own business.

Meeting these desires may not be an easy task, and it will therefore be necessary to operate with different educational objectives relative to different student target groups. In the following we shall introduce an antithetical systematisation.

3.5.1. Target groups and educational objectives.

The above discussion on *objectives* and desires in connection with entrepreneurship leads to an obvious distinction between two patently different educational target groups (Koch 2003):

- On the one hand, we have a group of students to whom it would be generally *beneficial to know more about entrepreneurship*. This for reasons of alternative future employment e.g. in systems geared towards evaluating entrepreneurship activity and towards contributing to the construction of the institutional context encompassing entrepreneurship activity. Typically, this target group is situated within the economics and management disciplines; it constitutes an important element in the construction of an entrepreneurial culture in society as it often represents future opinion leaders or political and economic decision-makers such as administrators in the political system, leaders, or managers in larger private businesses (Koch 2003). One knowledge element might for instance be an understanding of the consequences of business policy – regionally as nationally – in relation to entrepreneurship development.
- On the other hand we find the potential entrepreneurs, already *oriented towards starting their own business at some point*. Where students already have a clearly defined business concept, there are valid reasons for applying the management inspired entrepreneurship

teaching concepts – which could for instance include business plan developments.

This contrastive analysis of educational objectives is primarily seen from the point of view of the students. In close relation to this – and on the basis of our earlier distinction between education *in* and *about* entrepreneurship, it is, however, feasible to classify the students on the basis of the *content* they pursue in the entrepreneurship education:

- On the one hand, we observe a group of students with an *academic interest in learning about the entrepreneurship phenomenon*. This is made possible by research-based knowledge about the entrepreneur, his typical traits and mistakes, and about the entrepreneur's role in economy and society. From a university perspective, this group represents no complicating educational challenges since this kind of knowledge can be communicated by means of the conventional university teaching methodology.
- On the other hand, we have a group of students interested for practical reasons as they aspire to become entrepreneurs, and thus learning becomes a question of *preparing the students for their own entrepreneurial life*. The solution as to how to prepare the students for such an active competence is less clear-cut. Such teaching therefore represents a considerable challenge for the university system since there is a scarcity of valid explanations which can either be mapped or generalised. As already argued, there is much to indicate that this calls for a combination of entrepreneur -and management theory linked with procedural and personality-oriented educational elements.

As pointed out in the previous chapter's discussion of context, the universities represent a fount of competence – a contributory factor in societal growth and innovation. However, this fount of university wisdom may spring from two sources:

- One source contributes with *actual entrepreneurial competence* towards one group of enterprising students, namely the entrepreneurs in spe. This target group is quite heterogeneous – partly because it must be assumed that these students are distributed across a considerable number of academic disciplines; and partly because, in all probability, the students have reached different stages in the entrepreneurial process.
- Another source contributes with a considerable aggregate of *inventive expert knowledge within the multiple disciplinary fields of the*

university which through transformation could be turned into commercial opportunities (Koch 2003). This group, too, is quite heterogeneous, and in principle it encompasses just as many sub-divisions as there are expert knowledge disciplines at the university – i.e. obviously the natural sciences and engineering, but – with respect to experiential economics – perhaps an equal degree of subject fields within aesthetics or other departments of the humanities. It has to be assumed that the primary interest of these students lies in their respective subject areas of expertise, and any entrepreneurial orientation should be presumed latent only. Students are students, and as such they should not necessarily learn how to start a business right from the outset. Rather, they should learn to think innovatively and to identify opportunities in relation to their field of expert knowledge.

This distinction is mainly related to the subject matter of interest to the students prior to participation in entrepreneurship education. Both groups represent considerable challenges to the university system.

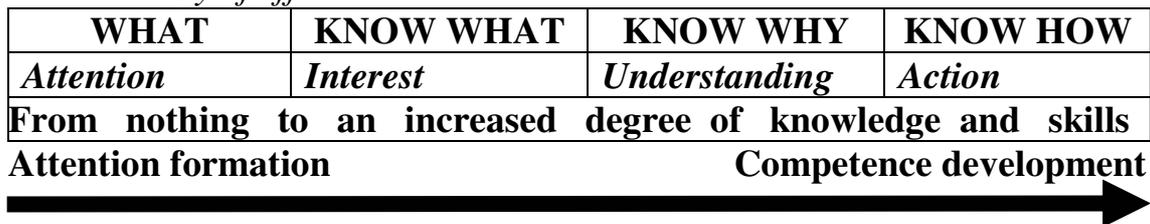
Finally, we argued above that it may be advantageous to distinguish between what kinds of *behaviour* the teaching aims at promoting:

- On the one hand we have an actual *entrepreneurship education* directed towards promoting the kind of personal behaviour indicative of initiative to establish a new enterprise – alone or in cooperation with others – with an expressed commercial goal.
- On the other hand we encounter teaching aimed at promoting *enterprising behaviour* in the wider sense of the concept. The challenge here is to create educational programmes developing the human capacity for handling, creating, and thriving on uncertainty and complexity.

Our antithetical systematisation above is first and foremost a pointer towards the conclusion that educational programmes should be differentiated in relation to target groups and educational objectives. At the same time it should also be observed that an overlap in the teaching of the various target groups might be rewarding. The students oriented towards starting their own business would probably benefit from acquiring an understanding of the institutional relations attached to the emergence of new businesses. Likewise, those with a general academic interest in knowing more about entrepreneurship may find it useful to gain insight into the practical problems facing the entrepreneur. Thus, the central responsibility for the universities will be to correlate this diversity of apparently contradictory target

groups and teaching objectives into a consistent curriculum of entrepreneurship education. In this connection it would be opportune to regard the issue of target groups in the light of processes where students develop increased interest in entrepreneurial undertakings. The figure below represents a hierarchical illustration of potential effects (Lavidge & Steiner 1961; Dreisler, Blenker & Nielsen 2003).

Figure 7. Education and entrepreneur competences expressed as a hierarchy of effect.



The two student groups mentioned above – the students already oriented towards starting their own business and the students needing to know more about entrepreneurship – represent the groups “know why” and “know how”. The interesting part of the point of view illustrated here is, in fact, that this schematic representation reveals an array of potential target groups and teaching objectives not demonstrated in traditional entrepreneurship education at all – both aspects are connected to the two initial stages of the effect hierarchy. The figure further shows that entrepreneurial educational content need not necessarily be limited to factual knowledge about how to establish an enterprise but should to an equal extent deal with issues such as opportunity identification and entrepreneurial thinking.

The textbox below illustrates an example of a programme aimed at the first levels of the hierarchy.

Box 17.

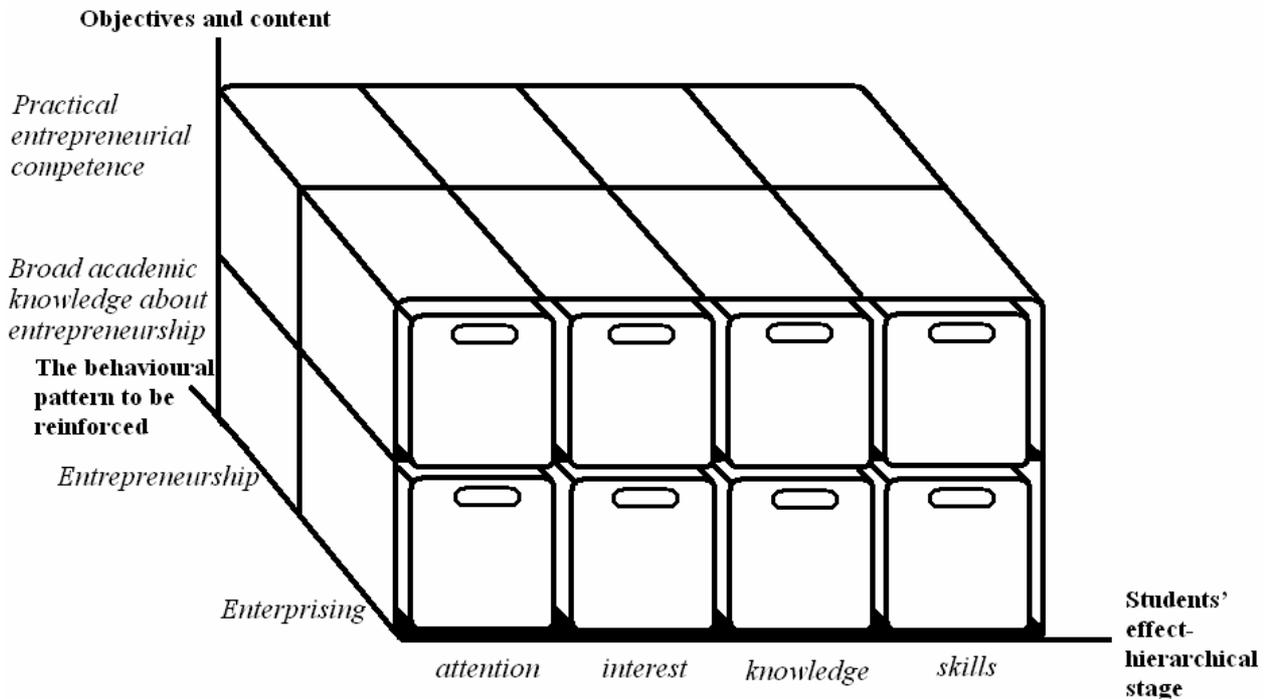
ROXI at Rostock University primarily seeks to attract students with a preference for cooperation with others, for brainstorming, and for being together with people of similar dispositions towards behavioural change. The course design is less focused on students who have already realised that they want to start a business – based on a technological development, for instance. The students attending ROXI are people being at the initial stages of contemplating some kind of venture without yet having decided what or how. The courses are marketed as being highly creative and inspirational – not as being exhaustive programmes in marketing, accounting, etc.

The idea behind the effect hierarchy is that the educational point of departure should concur with the stage reached by the student. Thus, one significant target group is comprised of students from various different subject fields – students who have never thought about starting an enterprise because they have been preoccupied by the subject area of their chosen discipline. In the following we shall present a brief suggestion for an educational programme aimed at this target group and based on above-mentioned effect hierarchical model.

- The primary duty towards a target group like this one would be the establishment of *the connection between their subject field, their person and the possibilities* for acting entrepreneurially. Presumably, this student group is unlikely to seek out entrepreneurship courses on their own, and this puts the onus on the teaching staff within the respective subject fields.
- Should this strategy succeed we would probably experience an increase in students' *interest in entrepreneur-oriented subjects*. An interest not necessarily immediately entailing their embarking on business establishment; they should, however, learn to think innovatively and detect opportunities – i.e. the aim is to strengthen enterprising behaviour.
- This increased interest would often entail the students realising *a need for increased knowledge* about the various aspects linked with expressing oneself entrepreneurially. At this stage a wide range of entrepreneur-oriented course programmes would therefore be relevant – all depending on which of the various above-mentioned behavioural directions will be manifest in the individual student's enterprising spirit.
- It is only when opportunities are identified, when a business concept has taken shape, and when the student is ready to take more *concrete action* that the management-based theory – in the shape of business plan teaching – actually becomes relevant.

Figure 8 shows a tentative systematisation of the issues facing a university with respect to the composition of various educational programmes as related to the key antitheses and decisions we have outlined.

Figure 8. Outline of didactical choices when planning entrepreneurial education.



The model should be seen as a frame of reference – as a guideline for the individual university in their structuring of teaching objectives, target groups and course content.

3.6. EDUCATIONAL OBJECTIVES, CONTENT AND PEDAGOGY.

Practically any business career presupposes a combination of specific knowledge and concrete skills on the one hand – and the more sensitive human aspects and social competence on the other. An entrepreneur will further need the ability to integrate and combine a wide range of cross-topical knowledge and also the ability to combine a variety of skills. If we study the reservoir of knowledge drawn upon in traditional entrepreneurship teaching approaches we find, as mentioned above, two fundamental contributions. One aspect, primarily rooted in the management discipline, contains a substantial aggregate of inspiration directed towards education *in* entrepreneurship; and the other, primarily directed towards education *about* entrepreneurship, supplying a considerable quantum of entrepreneurship theoretical knowledge. The management element necessary for the entrepreneur is relatively easily taught in the classroom in line with many other skills which can be imparted by traditional teaching. Whereas other skills, especially more sensitive human resource-oriented competence, will not be

easily mediated through conventional teaching methods (Garavan & O'Coinneide 1994.1: 5). Skills of that nature are exemplified in the textbox below.

Thus, the issue of educational objectives is linked with a dilemma as to whether the teaching should be *in* or *about* entrepreneurship. Construing this dilemma as a dichotomy could easily lead to the conception that experientially-based learning processes *in* entrepreneurship focused on personal development could not be of an academic nature – whereas conventionally-based teaching focussed on the

about-aspect, including theory, cases and simulation, would be acceptable. It could be argued, however, that traditional case-teaching is no more theoretically or conceptually-oriented than is project work or other kinds of action-learning (Gibb 2002: 239); and that the dichotomy is fundamentally false since the principal objective of university education is not acquisition *of* but rather reflection *on* knowledge. Entrepreneurial opportunities may be perceived as a construct being enacted when students, entrepreneurs or businesses try to create sense in the world – for instance engendered and necessitated by changes in the student's or the entrepreneur's life or in their environment – thus requiring the establishment of new sense relations. The most particular traits of opportunities only emerge retrospectively when you try to establish a meaning on the basis of experience (Gartner et al. 2003). Opportunities occur when the surrounding world becomes meaningful and when this is realised (Blenker 2005). This perspective contains an internal, reflective element involving an interlude of deliberation combining new observation and previous experience for purposes of new sense-making – in conjunction with an external, active and experimental element of action incorporating previous experience in new actions (Dimov 2003). In the light of this there are no fundamental issues preventing universities from including the sensitive, procedural and personal aspects of competence building.

This chapter has mainly dealt with educational objectives and content. The key issues have partly been a discussion of which target groups and teaching objectives would be considered reasonable relative to entrepreneurship

Box 18.

Jonsson's list of capacities for enterprising behaviour and business development:

- Communicative skills
- Analytical capacity
- Competence in facilitating processes of problem-solving
- Competence for recognising the role of values in decision-making
- Social competence
- A global perspective

(Jonsson: 13)

education – and partly a discussion of which concrete content pertaining to academic traditions, theories and teaching processes would be considered expedient relative to the various objectives and target groups. The issue of personal competence and the associated teaching processes leads into an area beyond the subject-related educational content – viz. into the area of pedagogical processes and, consequently, into a discussion of how different forms of learning processes might stimulate enterprising behaviour and entrepreneurship. It might, however, be justifiable to reverse this question: how enterprising behaviour, in general, might be a stimulating factor in pedagogical university processes – in such a way as to even characterise this as entrepreneurial learning processes, as it were. The textbox below illustrates suggested significant elements of learning processes aimed at developing participants' action-orientation and initiative.

Box 19.

Significant elements of entrepreneurial learning processes:

- Learning processes should be organised as social, developmental processes where learning takes place through knowledge-sharing and the exchange of knowledge as interaction between various stakeholders.
- Processes should be structured so as to allow interdisciplinary knowledge. The organisation of institutions of higher education into subject-oriented structures may constitute a barrier for the understanding of complex issues in practice.
- The aim should be to develop participants' capacity for learning to learn through the application of many and varied sources.
- The application of pedagogical forms – including behavioural, personal-relational and concrete skills – should be structured so as to constitute an element of the overall objective, i.e. to develop initiative individuals.
- There should be a mediation of knowledge advantageous to the handling of entrepreneurial action.
- There should be an inclusion of relations such as feelings, motives and motivation: the interaction between cognitive, affective and connotative developmental elements. The currently predominant management approach is frequently focused on purely cognitive objectives.

(Gibb 2002: 253).

Enterprising behaviour – or initiative and action-orientation – is *in itself a learning form* or process producing *the novel* on the basis of current circumstances – be they the circumstances of the university student or the en-

trepreneur. Thus, neither content nor learning form should be regarded in isolation but should, instead, be viewed as constituents in coordination with the circumstances – with the context as it were. Enterprising behaviour in a university context is thus about how universities exchange knowledge and personal competence into value. Enterprising behaviour is a learning form in itself – or a study method where action-orientation, opportunity-seeking and opportunity-realisation are important elements; but where knowledge and understanding of the world constitute additional elements in the promotion of capacities for opportunity identification and for the perception of how resources necessary for opportunity realisation are acquired.

CHAPTER 4.

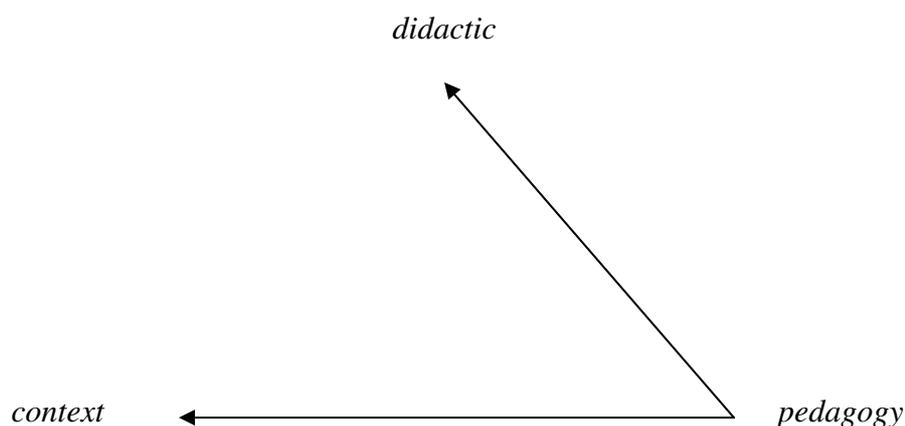
THE PEDAGOGICAL CHALLENGES.

This chapter discusses which pedagogical theories and methods will be best suited for furthering the student's capacity for entering into an entrepreneurial process. Taking pedagogical theories and teaching methods as our point of departure, it is our objective to reach a more profound understanding of entrepreneurial learning processes and – subsequently – to propose a set of normative statements concerning the organisation of learning processes focused at developing academic and personal student competence in 'enterprising behaviour' and 'entrepreneurship'. Thus, we wish to contribute to the development within the field of 'entrepreneurship education'; and realizing that said concept denotes more than one meaning, we shall deal with both aspects of the term.

We intend to investigate a series of aspects pertaining to education as a basis for establishing an 'entrepreneurial culture' – encompassing the development of personal skills and behavioural patterns as well as the starting-up of new businesses and similar innovative behaviour. Our contribution is an exploration into those areas of pedagogical theory we deem to be of particular interest within the realm of entrepreneurial competence and behaviour as outlined in the previous chapters (chapter 3 in particular).

In this chapter too, we shall introduce our general statement – by way of illustration – that changes in the design comprising context, pedagogy and didactics will affect the entire structure.

Figure 9. Entrepreneurial pedagogy presupposes changes in didactics and context.



Since entrepreneurial performance often comprises a considerable array of complex decision-making processes, adaptation of only one pedagogical theory – and hence a limited number of pedagogical methods – cannot meet the demands required by education within this field. The methods and techniques selected from various pedagogical paradigms and theories are based on those we have seen applied at the university communities visited. These methods will be compared with the pedagogical theories, methods and techniques which, according to our theoretical deliberations, was deemed to be most relevant. As prevailing pedagogical theory we lean on two principal schools: The *experience-oriented pedagogical theories* and Lave & Wenger's theory on *legitimate peripheral participation*, whereas other theories will be considered to a lesser extent.

Briefly defined, experience learning – inspired by the maxim “learning by doing” which encapsulates the fundamental notion of the concept – is about learning from actions. Based on this simplified definition, experience learning appears to be relevant in entrepreneurship education. It seems unlikely that students would acquire special skills and competence in demonstrating entrepreneurial behaviour and performance by reading textbooks, on the development of entrepreneurship theory; by attending lectures on theorists such as Schumpeter or Kirzner; or by, subsequently, writing exam papers on the topic.

In addition to experience-oriented pedagogical theories we shall also include pedagogical theories based on social constructivism since the entrepreneur, like other decision makers, receives and interprets signals from his environment in accordance with his background, perspective and attitude. The perception of the environment, or segments thereof, as a social construct which only “exists” according to the observer and interpreter (sense and sense-making) might contribute to a new understanding of entrepreneurial decision-making processes. According to Kirzner (1973) the innovative entrepreneur is characterised by having a unique perception (an alertness) enabling him to see opportunities in his surroundings before others; and by having a high degree of confidence in the belief that he can influence his surroundings – that he is not enslaved by his surroundings as part of “faith” (internal beliefs of control contra external beliefs of control (Shapiro 1975)). Social constructivism is – more or less explicitly – the premise for several researchers within the field of entrepreneurship education (Rae 2000: 148), (Johannisson & Lundberg 2002: 5), (Jonsson & Jonsson 2002: 5), (Gibb 2002: 254) and (Jack & Anderson 1999:112).

Our reasons for choosing Lave & Wenger's (1991) theory on legitimate peripheral participation in relation to entrepreneurship education are primarily based on the facts that:

- historically, it has been the assumption that students (potential entrepreneurs) would benefit from meeting practicing entrepreneurs and other business persons e.g. in the role of guest lecturers;
- according to Lave and Wenger, the learning process should involve the whole person; it is not solely a question of imparting knowledge. This concurs with our focus on education *for* and not just *about* entrepreneurship which *also* necessitates an inclusion of increased focus on personal development;
- Lave & Wenger equal general theoretical knowledge to concrete knowledge. A pertinent perspective in this connection where, on the whole, there is a lack of general knowledge as to how to ensure entrepreneurial success;
- Lave & Wenger are critical towards the current educational system which, in their opinion, is too far removed from the surrounding society: working in the 'Ivory tower' without encompassing the practical orientation relevant and necessary in education *for* and not just *about* entrepreneurship.

4.1. EXPERIENCE-ORIENTED PEDAGOGY – WHAT IS THE ROLE OF EXPERIENCE?

The following presents an overview of experience-based teaching as traditionally conveyed in relation to entrepreneurship education.

Traditionally experiential pedagogy has been conveyed by activities:

- based on participative experience
- providing linkage to participative experience
- contributing to/setting the scene for participants' experience formation.

Illeris expresses his view on experiential pedagogy:

“Ideally, experience-oriented pedagogical processes should be centred on weighty problem areas personally encountered by the student; and on the processing thereof in a progressive continuum of the unfolding of experi-

ence based on the existing pattern of experience and governed by a progressive scope of action” (Illeris 1984: 32).

According to Illeris the teacher should *not* include authentic experience in his planning; he should rather plan for providing the participants with the space and inspiration needed for a constant experiential development process. One of the key notions is problem-orientation in the sense that the experience process is best stimulated when the problems dealt with are perceived as being relevant by the learners. This presupposes fundamental and actual student influence on the planning of educational activities. It is also important that the content of educational action be selected on the principle of exemplariness. This means that examples and relations, selected to provide linkage between the experiences and interests of the students and relevant segments of the material and sociological reality, rest on a conscious choice.

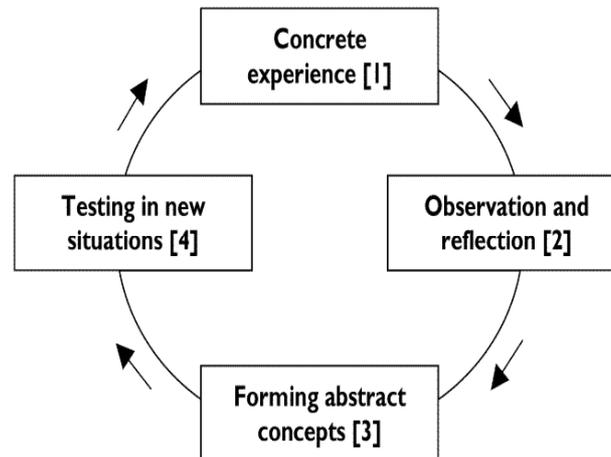
There are, however, theorists who – more than Illeris – stress the notion of building up direct experience. This seems particularly relevant in connection with entrepreneurship education: in all probability, the students have only limited experience in project management -and control, in starting up a business, etc. Consequently it will, in most cases, be necessary to provide the students with the opportunity to pursue personal experience within the various aspects of entrepreneurship. Thus, it will be advantageous to include Kolb (1984) and Schön (1987), theorists on experiential pedagogy.

4.1.1. Kolb’s learning cycle.

This model is developed by David A. Kolb (inspired by the work of Piaget, Dewey, and Lewin) (see figure 10) is probably the most prevalent application-oriented learning theory within the field of experiential pedagogy. This approach demonstrates that most learning processes are based on a concrete action yielding an experience constituted by the results of the action in the concrete situation. Next, the learner reflects on the results to ensure they are understood, thus enabling him to predict the result of the same action in a similar situation. In the third stage, the learner attempts to comprehend the general principle – for instance by experimentation in other situations one or more times. According to Kolb, the learner may not necessarily be capable of verbalizing the general principles. When applying this model in a university context, it is often necessary to be able to verbalise; because traditionally there is a wish to measure the knowledge acquired by the student; and if he is unable to verbalise his new knowledge, it will be difficult for the teacher and/or fellow students to give feedback. In stage four, the

learner is able to apply his new “theory” in other situations. Kolb emphasises that it is possible for the learning process to take its *beginning* at one of the other stages.

Figure 10. Kolb’s learning cycle.

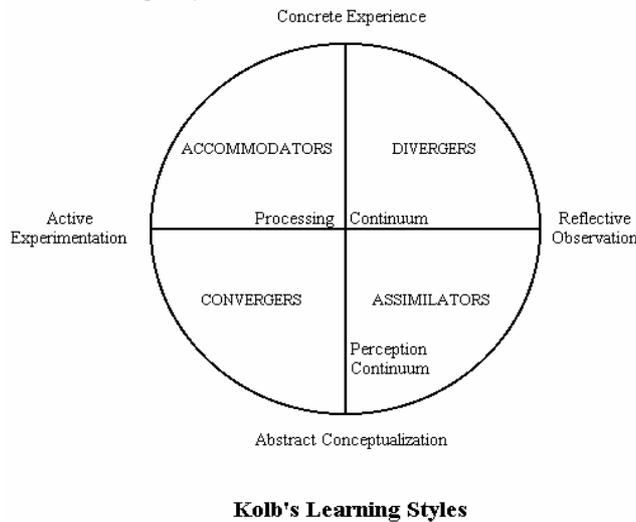


Source: Kolb, David A. (1984)

Yet another reason for the suitability of this model in entrepreneurship education is Kolb’s emphasis on the fact that it is a matter of a cyclic spiral: firstly, it is often necessary to go through the four stages several times in order to fully understand the general principles. Secondly, it is more than a cycle, because you continually progress into a more profound discerning of the problem dealt with – as opposed to running in circles. Thus, *learning to learn* seems an important aspect in entrepreneurship since an entrepreneur frequently concerns him with entirely new business concepts and therefore cannot always seek advice or guidance in his network. Hence, it is necessary to experiment on your own; and it is far from certain that your initial, immediate understanding of the situation and the ensuing proposal for a solution will be accurate. You develop experience, and you learn to learn.

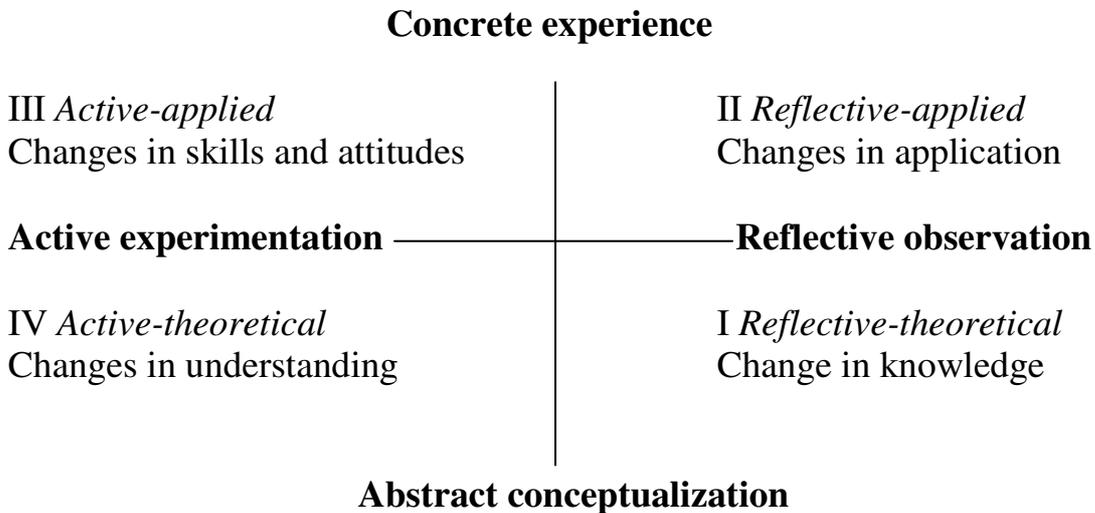
In addition to recommending a cyclic experience-based learning process, the model can be expanded to encompass a representation of the way different people adopt different *learning styles*.

Figure 11. Kolb's learning styles.



The quadrants of the cycle illustrate the four *learning styles*: concrete experience, reflective observation, abstract conceptualisation and active experimentation. The four learning styles can also be represented as in figure 12 below:

Figure 12. Conceptual grid of learning styles .



Source: partial model by Garavan & O'Coinneide (1994.1: 9-10)

The four learning styles differ with respect to both benefits and the individual pedagogical techniques applied. We shall return to this question at the end of the chapter in connection with the presentation of our empirical findings. Here it can be seen that application of 'the reflective theorist' will change the student's knowledge of the field: he acquires the knowledge material and seeks to conform to what has been learned. The learned material is adopted like a manual for the individual's activities. By applying the

next learning style, ‘the reflective practitioner’, you obtain changes in your way of performing an action. This is about guidelines and advice yielding experience during a sequence of actions. The third learning style is ‘the active practitioner’ who, according to this division, will undergo a change in skills and in his attitude towards entrepreneurship: he adapts. Finally, there is the fourth and last learning style, ‘the active theorist’ who during the learning process explicates or changes his perception of the phenomenon. He is the one who gathers the threads towards an understanding of what he is involved in.

If we investigate how this division of learning styles fits in with entrepreneurship and entrepreneurs, Garavan & O’Cinneide (1994.1: 9-10) refer to a series of studies showing that entrepreneurs prefer one of the active learning styles. Although, they say, practice shows that the teaching and training situation that potential entrepreneurs are most frequently exposed to is the one labelled I, i.e. ‘the reflective theorist’. This traditional teaching method is focused on developing the students’ conceptual terminology, and the exam will be a matter of an ability to repeat these concepts. Learning participation is solely reflective (non-activating). As mentioned, we shall discuss this matter at a later stage.

Donald A. Schön is known for his investigation into the significance of practical problem-solving and its impact on our experience formation through reflection – on process and results. For that reason he too has been included in our basic pedagogical outlook on developing “entrepreneurship education” – in the sense ‘enterprising behaviour’ and ‘entrepreneurship’.

4.1.2. Schön’s theory about ‘the reflective practitioner’.

Besides having worked on organisational learning with Argyris (1989), Donald A. Schön (1987) has studied how professionals solve occupational problems by an on-going reflection on their actions. This theory is interesting in connection with entrepreneurship, because it is Schön’s hypothesis that acquired academic knowledge does not comply with the varying nature of the practical situations encountered by professionals. Almost any discipline (Schön is primarily concerned with academics) is based on our ability to function in a world of complexity, uncertainty, instability, unique situations, and conflicting values (Schön 1987: 14). The same is true for an entrepreneurial decision-making process. Moreover, it is essential that Schön does not advocate a more formal education. On the contrary he investigates how, by way of experimentation, experienced practitioners reach a formulation of the problem and, eventually, a viable solution. Actually, he be-

believes that there is an artistic element to this practice (Schön 1987: 18). This concurs with our perception of entrepreneurship and the ensuing requirements to the learning processes (see chapter 3).

Several researchers in “entrepreneurship education” seek inspiration in Schöns’s theories. Thus Johannisson & Lundberg, who regards entrepreneurs as a special variety of ‘reflective practitioners’ who learn by analogy: drawing on their own recollections – and those of their colleagues – of previous cases/examples, they determine which actions were successful and which went wrong. Previous experience is intuitively adapted to the concrete situation. This suggests that the solution arrived at may not be the only one admissible, but also that this is irrelevant as long as it works (Johannisson & Lundberg 2002: 6). This part of Schön’s theory about “the reflective practitioner” seems to concur with Johannisson & Lundberg’s general social constructivist outlook on knowledge and learning which is based on the assumption that having different perceptions of the world, people will naturally work differently and arrive at different solutions.

Jack & Anderson (1999) also describes the goal of education in ‘enterprising behaviour’ and ‘entrepreneurship’ as being that of creating “reflective practitioners” – i.e. graduates capable of applying theory in dissimilar contexts and equipped for an entrepreneurial career.

Besides drawing on previous experience, the very process applied by the “reflective practitioner” when meeting occupational challenges is experience-oriented. Schön describes this unique procedure as “reflection-in-action”, and it is composed of a series of sub-processes:

1. *“Reframing the problem and thereby suggesting a direction for reshaping the situation.*
2. *Stepping into the situation, to make oneself part of it.*
3. *Conducting an experiment to discover what consequences and implications can be made to follow from it, adapting the situation to the frame.*
4. *The moves of the practitioner also produce unintended changes, which give the situations new meanings. The situation talks back.*
5. *The practitioner listens and as he appreciates what he hears, he re-frames the situation once again.”*

(Schön 1987: 131-132).

The working process delineated – probably inspired by Lewin’s (1951) description of action research as a research model – is also relatively close to

the Kolb learning cycle. However, Kolb's generalisation stage is "missing" from Schön's model. This reveals Kolb to be cognitively oriented, whereas Schön attach more importance to intuition and concrete exemplification (Schön 1987).

One bid for a solution of how to create reflective practitioners could be by apprenticeship or, perhaps rather by communities of practice/situated learning/legitimate peripheral participation (see the following section) where the student is apprenticed to an experienced entrepreneur in a small and maybe newly established enterprise. Among the examples analysed by Schön is e.g. a student of architecture in apprenticeship at and supervised by an experienced architect while working on an authentic assignment. Typically, the work is carried out at the school of architecture and the supervisor is a teacher at the school. Thus, it is possible to envisage students working on actual projects without being obliged to spend most of their time outside the school. It is important, however, that the problems are authentic and not fictitious.

Since the basis for Schön's study is to determine how practitioners experiment (and hence learn) in their work, he quite naturally attach more weight to active experimentation than does Illeris. In connection with Kolb and Illeris, however, there is yet an interesting difference. While valuing the importance of active experimentation, Kolb stresses the need for reflection and abstract conceptualisation. Thus, he combines a cognitive approach with an insistence on learner *activity*. Illeris, on the other hand, believes in drawing on the learner's previous experience which necessitates much reflection from the learner who will also be required to recall experience and place it in a new context. This further necessitates dialogue in order that other learners and the teacher participate in and stimulate the learning process.

The above discussion of the entrepreneurial learning process focused on experience-based learning in close interaction with practice will naturally evoke a probing into the extent to which teaching should be based on theories and models that will frequently be simplified and generalised illustrations of an "objective" reality. Theories and models may be applicable as auxiliary tools in the implementation of an entrepreneurial decision-making process. As shown in chapters 1 and 3, there is no unanimous agreement as to either the extent of a theoretical foundation or the extent to which theories and models should be incorporated from the "science" or "art" area. Similarly, in relation to the planning of the personality developing element in the educations as well as in the teaching, there are various theoretical areas available to teachers and students. Thus, one source of inspiration

within entrepreneurial theory springs from psychology, economic psychology and sociology. The students can be imparted knowledge about the research focused on the personal traits seeming to recur in “successful” entrepreneurs. This could for instance be a relative high need for achievement; a deep-rooted belief in one’s ability to shape one’s surroundings; the ability to see possibilities and think innovatively; the ability to form social and occupational relations; the ability to steer through complex decision processes; etc. The person responsible for planning the framework of the learning process will also benefit from an insight into the theories characterising the successful entrepreneur, and he might include this as elements in the learning process planning.

At certain universities in the UK and in USA having staked much on MBA-programmes in entrepreneurship, such criteria are even part of the admission requirements. It is therefore important to consider which theoretical principle to include when, why and how – especially in relation to education for ‘enterprising behaviour’ and/or ‘entrepreneurship’. As demonstrated in chapter 3, current education in entrepreneurship is, to a great extent, based on an adaptation of the classical management theory due to its technical and normative focus. The primary goal here is optimisation or development of the existing – it is not about a search for novelty or about finding entirely new ways of doing things. This approach also seems relevant – yet it depends on the objectives of the teaching; on the target group; and on where you are in the entrepreneurial cognition -and decision process.

4.2. THEORY AND/OR PRACTICE.

In the literature about entrepreneurship education, several researchers investigating this field have attempted to describe the interaction between theory and practice. The most pronounced spokesman for introducing more theory into the education *about* or *in* entrepreneurship is Fiet (2000a). In his view, theory provides an answer to what entrepreneurs should do; and he perceives theory as the only passable way since being lucky or intuitive are states that cannot be taught. He argues that theory should be general rather than descriptive in relation to entrepreneurial performance. He does, however, emphasise the importance of would-be entrepreneurs’ ability to apply the theories: *“The theory shouldn’t be weak, must consist of more than war stories and must be able to pass the test of applicability – and the students need to know how to apply the theories”* Fiet (2000a). Thus, he wants a theoretical foundation – a learning style close to the “abstract con-

ceptualisation” seen in Kolb (1984) and Garavan & O’Cinneide (1994.1). The question, then, is whether it can be referred to as abstract conceptualisation when theory is left unaffected by student experience; when, according to Fiet, they learn only to apply – not to create or adapt – the theories. This is a prevalent method at Danish universities where lectures followed by case-studies are aimed at training the students in understanding – and documenting – theories and models, and in demonstrating their ability to describe, analyse and solve a presented problem.

However, both Johannisson & Lundberg (2002), Jonsson & Jonsson (2002) and Gibb (2002) emphasise practical experience as being much more important. Practical experience can be realised in knowledge of and cooperation with the surroundings (in this case – primarily businesses); and it can be realised by the individual student becoming more active and gaining experience in a not specifically defined context which may well be the university: in practice, the two kinds of practical experience often overlap e.g. in traineeships, project work in existing organisations, etc. The considerable weight attached to practice above does not entail, however, that theory is superfluous, only that *”knowledge should be offered on a need to know basis”* (Gibb 2002). Hence, students should take practice as their point of departure and subsequently seek recourse in relevant theories and other knowledge when it is advantageous or necessary in connection with the problem they work on. This working procedure and learning process has become increasingly popular at Danish universities particularly in connection with final theses at bachelor or graduate level; there has, however, been a tradition for applying this approach at business and engineering schools for some time.

This deliberation between practices as opposed to theory is further clarified and explained by Jonsson & Jonsson (2002: 12). They want to abandon the traditional university focus on the mediation of standardised knowledge – comprising models, theories and concepts – to be comprehended and reproduced by everyone. Nevertheless, the students need comprehensive background knowledge as a basis for meaningful action and creation of opportunity. In other words: *”The consequence of this is that you have to develop a different focus from book and theory teaching towards ability to find, formulate and use a combination of established theories in a certain situation”* (Jonsson & Jonsson 2002: 12). The very rationale behind entrepreneurship being action, Jack & Anderson argues that there is a need for more practice, and he points out the inadvisability of having universities where both staff and students lack practical experience as this may lead to a situation where theory becomes too weighty (Jack & Anderson 1999: 117).

The last-mentioned researchers of ‘entrepreneurship education’ or ‘enterprising behaviour’ are thus campaigning for the same solution: they share a strong desire for increased student activity and hence experience. This does not entirely preclude theory, as it were; but the students should learn to seek and apply relevant theory on their own. In this experiential approach to pedagogy, we would have liked the authors of the above statements to include Kolb’s focus on experimentation and that stage of the learning cycle where the learner, on the basis of his own experiences, tries to reach some general principles (a “theory”). We believe these aspects to be of special importance in connection with entrepreneurial processes where the entrepreneur often finds himself quite alone, facing challenges with no antecedent experience and hence guidance to draw upon. This can be attained by means of e.g. casework, project work, use of logbooks (to further reflection on the personal learning process), simulation, traineeships, observation and other forms of fieldwork – which is in accordance with the pedagogical techniques recommended by Garavan & O’Cinneide in connection with the study of learning styles presented at the end of this chapter.

4.3. INDUCTIVE AND/OR DEDUCTIVE METHOD.

Another methodological aspect closely related to experientially oriented learning is the question whether to apply an inductive or a deductive method. Inductive teaching is based on authentic examples and requires student activity from day one. Deductively oriented teaching is based on abstract theory – often selected by the teacher. Not surprisingly, Fiet argues that there is a need for more deductive approaches (Fiet 2000a: 7), whereas Jonsson & Jonsson (2002:13) emphasise more inductive methods: *“the learning process mostly starts with questions raised by the students about actual situations and problems”* .

In relation to Kolb’s learning cycle the starting point of the learning process is relatively unimportant – as long as the learner covers the entire cycle. Although he does point out that it will frequently be more preferable and natural to start from concrete experience. It can, however, be questioned whether Kolb’s stage of “forming abstract concept” can be juxtaposed to a theory introduced by a teacher.

Since potential entrepreneurs should preferably not be too dependent on theory, there is a great deal to be said in favour of inductive methods as a key element in entrepreneurship education. In their future entrepreneurial practice it will seldom be sufficient to choose the “right” theory and then apply it. It will often be necessary to combine an abundance of theories and

to apply them in both known and new ways; otherwise, you run the risk of seeing only a small part of the problem or the possibility. Potential entrepreneurs will find themselves in situations which have never been dealt with theoretically, and – consequently – they have to try to evolve their own theory through experimentation and testing.

Actually, the pedagogical theories and methods described as experience-based in this report, can be used to create *inductive tutorial sessions*. What matters is in which context they are applied: casework as inductive method may be feasible; but if – as is often the case – the students have been introduced to the required/appropriate theory beforehand, then it will doubtless be a matter of deduction where the students set out by going through the theory and subsequently apply it in one or more cases.

On the basis of the preceding discussion, we propose that education and teaching aimed at encouraging enterprising behaviour and, consequently, entrepreneurship should be an experience-based learning process continually alternating between inductive and deductive sessions with the inclusion of theory as experience is achieved, and as the need for additional experience arises. With respect to experiential knowledge and direct learning, it is desirable that, although an entrepreneurial action is in many ways unique, the learner be allowed – or even forced – to reflect and thus assimilate an awareness of why certain things work well, while others are failures.

4.4. AN ANALYTICAL PERSPECTIVE OF LEARNING IN RELATION TO “THE ENTREPRENEURIAL UNIVERSITY”.

Lave & Wenger’s (1991) learning system is situated, and they use the concept of legitimate peripheral participation as a reference to the process determining when learning can take place. They presume that, as a prerequisite for assimilating knowledge and skill/qualification/competence, the learner has to progress towards a complete participation in the socio-cultural practice – in a so-called practice community (see the following). More explicitly, they define peripheral participation as “*a way to speak about the relations between newcomers and old-timers, and about activities, identities, artefacts and communities of knowledge and practice*” (Lave & Wenger 1991: 29). Legitimate peripheral participation is not just about the development of knowledgeable, qualified individuals; it is also about reproducing and expanding the practice community.

If learning is conditioned by becoming a bona fide member of the practice community, then teaching situations characterised by e.g. guest appear-

ances by entrepreneurs etc. will obviously not suffice. The student needs to take part in the community for a considerable stretch so as to realistically advance from a peripheral towards a more central position. According to this hypothesis, entrepreneurship education will be most efficacious within the framework of practice communities.

Assuming that learning is best assimilated when an integrated element of a social practice, the construction of the framework for this practice becomes an important part of the learning perspective. According to Lave & Wenger, practice takes place in practice communities. Even though they have been much inspired by authentic examples of apprenticeship from all over the world, they conclude that not all learning can be viewed through an apprenticeship lens (Lave & Wenger 1991). They define a practice community as “*a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice*” (Lave & Wenger 1991).

Practice communities are not exclusively composed of master/teacher/instructor and one or more apprentices/trainees/students but comprise a disparate group of essential players in the practice community: from sheer novice to highly experienced old-timer. The participants who are more knowledgeable and experienced than the learner himself are especially important for the learning process and the mediation of skills (Lave & Wenger 1991: 56-57).

The pivoting point of practice communities is neither education nor development of the individual but the practice principle as such. Thus, newcomers are not objects of the (teaching) practice of others – as is the case in schools as we know them: they are participants in the practice community. According to researchers, this creates an excellent and efficient exchange of information or, to use a more modern concept, knowledge sharing. The community practice generates the potential course plan – that which can be learned by newcomers with legitimate peripheral access. Even though there is no explicit course plan there are definite goals for the learning processes, as the newly arrived participants – due to their peripheral access – are in a position to assess the practice and hence resolve what should be learned. The curriculum deviates significantly from “ordinary” curricula by offering the student an opportunity to engage in the practice – as opposed to being dictations describing correct practice (Lave & Wenger 1993: 93).

The question remains as to which types of practice the students should be involved in to become more entrepreneurial. There is no doubt that businesses generally comply with the description of practice communities; but in order that students develop entrepreneurial competence as a result of a

traineeship this should take place in a suitable community – viz. a relatively newly started enterprise or a business/organisation practicing intrapreneurship (there is, after all, more to letting the student go through an intrapreneurship project than just a goodwill gesture, it also presupposes the practicability of entering into partnership with experienced employees). The problem in connection with newly established businesses is that usually they only have few employees, although single proprietorship tends to become an increasingly rare occurrence. As a minimum, though, the business will always have a network of e.g. bankers, investors, legal adviser, advertising agency, etc.

Another solution could be to consider the entire entrepreneurial university as one big practice community. Only, the question is whether researchers, students, entrepreneurs, other business people, politicians, administrators, etc. can be said to share a common practice. As we shall touch upon in the following, it is possible for members of a practice community to have different goals for their practice; but can we talk about a shared practice in the entrepreneurial university?

The label ‘entrepreneurial practice’ necessarily presupposes the performance of entrepreneurial activity and the prompting of innovative ventures – regionally, nationally and/or globally. However, the scientific staff will probably continue to spend most of their time on research and teaching even if they should start their own businesses, work as consultants and/or otherwise communicate their knowledge to the business sector.

Attempts have been made at integrating business start-up into the students’ syllabus; but when it is not “just” a question of a didactic exercise, and when the businesses have to be financed by the students’ personal funds, the number of willing students will probably be few and far between. At certain US universities students participating in an entrepreneurship programme have a relatively large amount (app. 3000 dollars) at their disposal. At the present, however, this is not realistic in Denmark where the higher educational establishment has relatively limited possibilities for obtaining the means for extraordinary expenses of such dimensions. Initiatives like this will only be feasible in close interaction with the business sector or by funding.

In this case, the practice community should include experienced entrepreneurs. The question is whether they can be retained at the university – whether they will make an appearance on a daily basis. Some universities have set up incubators providing consultancy and low-level start-up costs during the initial stage of the business life-span, after which the participants are encouraged, or forced, to vacate the incubator. One solution could be

that entrepreneurs having started their business in the university incubator become university associates taking on tutorial or advisory assignments. This is seen at for instance Twente University. It is a matter of doubt, though, whether they can be characterised as constituting a part of the same practice if their only role is that of making an appearance to talk about what they do in their business. The most ideal scenario is found when the enterprises are situated in the immediate vicinity of the university. Our case-studies show that it is difficult for an entrepreneurial university to have a shared practice.

Lave & Wenger's (1991) approach to learning as a movement through an ever-increasing degree of participation in the practice community entails a learning process alternating between:

- cognitive and factual activity
- observation and commitment
- abstraction and concrete experience.

This perception of learning concurs with our views and also with the recommendations in existing publications on entrepreneurship and pedagogy/learning forms. It seems to be the agreement that, besides theoretically-based knowledge about e.g. business planning, business administration and legal aspects, there is also a need for practical and especially personal competence – such as the ability to negotiate, the ability to communicate, the ability to enter into social relations, leadership, etc. (Garavan & O'Conneide 1994.1).

This kind of personal competence cannot be transferred from one person to another; nor can it be imparted by reading books on entrepreneurship or by passive observation of entrepreneurs. It takes active experimentation and dialogue with entrepreneurs and fellow would-be entrepreneurs. As an entrepreneur you develop a kind of identity and self-perception during the process as you move from peripheral to full participation over a considerable period of time. According to this view you do not necessarily perceive yourself as entrepreneur until you start developing one or more ideas; but as you work with the idea you also develop your personal identity, and as your identity develops your drive to pursue the idea is reinforced.

In their approach to learning, Lave & Wenger attach importance to the language of the learners: the students are not supposed to learn by means of speech, but to learn to speak the language of the experienced members of the practice community. In cases where it is not possible to place the students in actual practice communities such as e.g. traineeships, one alterna-

tive could be the introduction of guest lecturers – ideally entrepreneurs – who speak the language spoken in entrepreneurial businesses.

According to Lave & Wenger learning processes include the whole person. It is more than just a question of cognitive activity – it is also factual activity/concrete experience. Consequently, the would-be entrepreneur cannot rely solely on lectures and literature – there is an additional need for training, role plays, simulation plays and for practical techniques aimed at training concrete personal qualifications. This clearly correlates with experiential pedagogy to which you are referred for concrete teaching methods.

4.4.1. How does learning emerge in the practice community?

The role of the master/the experienced member and his relations with the newcomer vary considerably from practice community to practice community; but, as a rule, it is more important that he give the newcomer legitimate access to the community rather than teach (Lave & Wenger 1991).

However, legitimacy is not enough. It is also essential to give access to a wide range of activities and to community members with varying degrees of experience in order that the newcomer may move towards full participation in the practice community. Yet this can be quite problematic. According to Lave & Wenger this is actually the main problem of our contemporary school system. In spite of having legitimate access to their school, pupils are sequestered from the rest of that world where the practices, they should partake in, are peripherally placed (Lave & Wenger 1991).

Newcomers in practice communities never partake by being observers only. As the newcomer is assigned varying tasks he gradually forms a general impression of what constitutes the community practice. Likewise, newcomers acquaint themselves with examples of masters, finished products and more experienced apprentices. Although newcomers partake in the practice, they cannot be expected to meet the demands on efficiency and responsibility characterising the activity as a whole. Initially, the newcomer is assigned minor and uncomplicated tasks involving only a limited risk of loss should he make a mistake. Gradually, as the newcomer gets more experienced, his contribution to the practice community becomes increasingly valuable. Since it is fairly easy for the newcomer to register the degree of his involvement, legitimate peripheral participation offers an excellent opportunity for self-evaluation. Lave & Wenger further believe legitimacy to entail fewer tests and a reduction in the meeting out of criticism (positive or negative). In traditional apprenticeship in Denmark, however, the latter is

only partially true: while feedback – quite correctly – takes on a more informal expression (as opposed to tests) apprentices seldom get explicitly positive feedback; on the other hand they get quite plain-spoken negative feedback when their task has been unsatisfactorily performed. Maybe this is owing to a lacking understanding of the inescapable fact that you cannot learn without making mistakes in the process. The incentive to advance further towards the centre of the practice community is inherent in the knowledge and skills/qualifications the learner acquires as well as in the very community: becoming a full member of the practice community is in itself a motivating factor as this provides a future for the learners/newcomers.

Concurrent with partaking in the practice so as to create a future for them, the newcomers change the practice by their participation. Such influence is necessary in order that the practices develop and survive. Thus, the various “generations” within the practice community need each other; but, as they are in a position to destroy each other’s future – perhaps even annihilate each other, they also fear each other. It is therefore wrong to assume that teacher/master/an experienced member of the practice and trainee/student/apprentice/newcomer always share a common set of goals.

With respect to teaching, language functions have always been regarded an important element in the classification of various ways of communicating knowledge. Verbal instruction has been believed to be more efficient than instruction by demonstration because it facilitates generalisation and hence enhances the scope of understanding. However, Lave & Wenger argue that analyses of instructional discourse and apprenticeship cases show the adverse. The challenge, they contend, lies not in the application of a language supporting the knowledge transfer but in the newcomers learning to speak like the experienced members of the practice community – in order that they become legitimate participants of the practice community. Pupils at our schools learn to talk *about* practice from an exterior point of view – rather than to speak from *inside* the practice. This language actually becomes a specific didactic language type. The practice community has no particular language for teaching/instructing the newcomers; but for instance storytelling and discussions of problematic cases play a significant role. It is fundamental that the newcomers learn not *from* talk but *to* talk in the community.

On the whole – if we follow Lave & Wenger’s recommendations – there is no need for teaching in relation to legitimate peripheral access to practice communities where newcomers gain access to the wide range of activities in which they gradually participate. They do not contribute to the same degree as experienced members, but the value of their contribution increases

steadily due to the favourable potential for self-evaluation. The primary motivating factor is practice community membership; but the new members also signify a development of the practice community. This is owing to the fact that, typically, experienced and newly arrived members do not work towards the same goals. In connection with learning, there has frequently been much focus on language, and here stories seem to be one of the key channels.

In our opinion, the philosophy of Lave & Wenger and the concepts concerning learning in practice communities may be a source of inspiration for the formation of didactics and pedagogy aimed at supporting the development of entrepreneurial skill and competence.

4.4.2. Learning as a continuous process.

When trying to establish a kind of practice community, it is important that the learners remain there for a considerable period at a time as learning is equivalent to gradual integration into such a community. The perception of learning as a continuous process is a central element even to those not working with actual practice communities. This means that learning processes are interrelated and seldom have fixed limits of inception or termination. Consequently, there is a need for relatively lengthy courses offering the students and opportunity to take up comprehensive areas within a subject field – for instance by means of interdisciplinary projects as opposed to the partitioning into disciplines, departments, theories, methods, etc.

Jonsson & Jonsson (2002) advocate for the expediency of perceiving learning as a continuous process. Elaborating this point of view, they state that the students at Växjö University do not acquire knowledge about subject fields by following restricted courses. Instead the students work on various themes thus gradually gaining an increasingly more profound theoretical understanding of various subjects as e.g. marketing and organisation. This view is in line with that of Garavan & O’Cinneide (1994.1.).

4.4.3. Practice communities, traineeships, networks, group work, etc.

As mentioned, traineeships/study projects in relatively newly established businesses are probably what will be best suited for fulfilling the requirements to a practice community. In this respect it is important that the student feel welcome in the organisation/business; that he gets the opportunity to associate with many of the members of the organisation/practice com-

munity; and that he quickly gain insight into all activities. It is important that the student be assigned tasks right from the beginning so as to avoid that he merely become an observer of the practice community activities.

It is doubtful whether the “classical” university of today can be characterised as a practice community. Neither apprenticeship nor group interaction has been the dominant culture. The so-called entrepreneurial university might have to introduce part of the philosophy behind the practice community concept in order to solve some of the challenges within interdisciplinary education and in order to meet the requirement for establishing closer relations to the stakeholders in the community in accordance with the triple-helix concept.

The entrepreneurial university could/should be founded on some kind of practice community – as it is perceived by Lave & Wenger – with the objective of supporting and furthering the construction of relevant networks consisting of students, teachers/researchers, and business people. Ideally, the relation-based networks should deal with the performance of entrepreneurial actions and with the compilation of knowledge concerning the performance of entrepreneurial actions. It might be most realistic to begin with the construction of networks and practice communities among the students as this would be better than nothing, at least according to Lave & Wenger who point out the importance of learning together with other learners who are either at the same level or who have progressed further in the practice community/learning process. This might for instance take the form of project work in groups of students with backgrounds in different academic fields – preferably including some degree of interaction with entrepreneurs.

Gibb deems learning as a social and development-oriented process to be a challenge of utmost importance in relation to entrepreneurship teaching: *“Given the perceived importance of the “for” and “about” approach to entrepreneurship and the academic views towards this and given the pragmatic recommendations of key reports that entrepreneurship teaching should involve working with and through entrepreneurs, the issue of learning as a social construct becomes of prime importance”* (Gibb 2002). As can be seen in the preceding, Gibb refers directly to Lave & Wenger’s concept, practice communities, and on that background he recommends that students should enter into practice communities with practicing entrepreneurs.

As suggested in our review of practice communities, most universities will have to change their approach to education and teaching if they want to establish actual practice communities for purposes of developing more students with entrepreneurial competence. In this connection it appears sensi-

ble to try out some of the characteristics of legitimate peripheral participation although it will not be in actual practice communities. In the following we shall outline the processes, methods, techniques and structures pertaining to social constructivism.

4.4.4. Approaches to learning and pedagogical methodology with reference to social constructivism.

As already mentioned, we find it relevant to include Lave & Wenger's (1991) perspective on learning as an integrated and inseparable part of social practice – primarily owing to our focus on “the entrepreneurial university”. They, in fact, take a critical stance towards the distance existing between the educational system and the surrounding world. As mentioned in chapters 1 and 2, one of the most significant traits of “the entrepreneurial university” is the need for breaking down barriers and having the different sectors (university, business community and the public) work in closer cooperation. In this connection we seek inspiration in Lave & Wenger's theories as we wish to determine whether they offer any suggestions as to how context (the entrepreneurial university), learning schemata, and pedagogy can be brought more concretely into a cohesively improved correlation (cf. figure 9).

We also intend to include the organisation theorist Weick's principles of sense-breaking and sense-making. He takes his point of departure in situations where existing knowledge and routines do not suffice, where conventional perception is challenged and maybe even destroyed. As a result, a need for sense-making arises. This type of situation is true for entrepreneurs working in areas where the degree and frequency of novelty is very high.

Bengt Johannisson & Lundberg's article entitled “Entrepreneurship as Breaking and Making Sense – Learning beyond Boundaries” is based on the organisation theorist Karl Weick's perception of learning. Being an organisation theorist Weick sees learning from an organisational/business perspective:

Sense-breaking takes place when predictability and routines taken for granted are interrupted. When this de-learning process has been carried out, a new meaning has to be established (“sense”). *Sense-making* takes place when someone detects something in the flow of events – a surprise, something at odds with the pattern. This cognitive process makes way for action and subsequent learning. The person(s) performing the sense-making cre-

ate(s) and determine(s) the logic prior to despatching it to the other players in the community for purposes of definition and guidance of the action. Weick refers to this communication of sense as “*sense-giving*” (Johannisson & Lundberg 2002: 5).

According to Weick, it is the management and the entrepreneur(s) of an organisation who are responsible for sense-giving. They suggest a construction of the reality to be used as an island of cosmos in a world of chaos, as it were. The employees may interpret this reality construct in different ways. What distinguishes entrepreneurs and certain managers from “ordinary” people is the fact that they do not need surprises to change their routines; they perceive and act on the need for sense-breaking and the ensuing sense-making.

This description of Weick’s views on organisational learning may perhaps be a little difficult to transfer directly to teaching in entrepreneurship and enterprising behaviour. But as the reality, according to this learning approach, is socially constructed (by e.g. managers and/or entrepreneurs), then the academic world will become only one stakeholder among others in “mutually shared and jointly enacted communities” (Johannisson & Lundberg 2002: 5). At the same time this reveals a little of what being an entrepreneur/displaying enterprising behaviour entails. The entrepreneur should be able to perceive and actively react on the need for sense-breaking; to detect things that do not fit into the pattern (anomalies); and to communicate his new interpretation of “sense” to his colleagues and/or employees. This concurs with what the Austrian School considers important entrepreneurial traits. The “real” entrepreneur is equipped with a quite unique alertness – i.e. a unique ability to spot new possibilities in his environment. Never being in equilibrium, the environment is constantly transmitting signals about various kinds of anomaly in e.g. the economic system. Some people are better equipped to detect, as well as act on, such signals (Kirzner 1973).

In chapter 3 we mentioned that the concept of possibility identification is a very central aspect in relation to the performance of entrepreneurial actions, but unfortunately this has been quite heavily toned down in the research on entrepreneurship and in the teaching *about* and *in* entrepreneurship. The focus has primarily been on developing business plans afterwards – after the possibility has been perceived and is about to be exploited. At this stage of the development process you often resort to the traditional toolbox from management theory. Researchers in entrepreneurship, viz. Bengt Johannisson & Lundberg, has been inspired by social constructivism and by Weick’s concept of sense-making. In Johannisson & Lundberg’s opinion, a

triple experimental approach to knowledge formation – or “knowledging” as they call it – is necessary for the promotion of entrepreneurial learning in the educational system.

The three elements of the approach are:

- participants should undergo (i.e. actively co-construct) entrepreneurial processes guided by mentors from the practice as a supplement to teachers;
- the entire undertaking should occur in the factual reality and in a dialogue with this reality. A university community where you merely sit down to discuss and solve the problems is not sufficient;
- a research agenda should always be attached to these learning processes as it augments the pursued knowledge about “entrepreneurial learning”. This research should also be interactive. (This point of view is quite similar to the active-theoretical learning style).

According to Bengt Johannisson & Lundberg it is essential that the students be encouraged to experiment. They should have a context in which to unfold; and the students should also be incorporated into and interact with the ensuing research processes.

Here Johannisson & Lundberg views education and research in entrepreneurship as an interactive process of knowledge-gathering and as motivation of both learner (entrepreneur/student) and teacher/researcher to reflect on, and perhaps communicate, the acquired experience. The academic-practice angle of this method is probably inspired by action research (Lewin 1951). This interaction could also be perceived as a triple-helix-model practice at the “lowest” level (the concrete/didactic level). There is a desire for as much interaction as possible between “the real world” and university research -and education (cf. chapter 2).

4.5. PEDAGOGICAL METHODS AND TECHNIQUES IN THE FOUR EUROPEAN UNIVERSITIES.

Our perception of the pedagogical methods and techniques applied are based on interviews with teachers/researchers at the four university communities outside Denmark. In most cases the background of the teachers in question is not founded on pedagogy but more typically on business economics. Thus, their descriptions of the methods applied are not absolutely in accordance with pedagogical terminology. Further, they may – consciously or unconsciously – attempt to present the pedagogy applied in

more progressive terms than actually justifiable. We nevertheless chose to include these practical experiences (we refer to chapter 1 for an overview).

As indicated above, the interviewees from the visited university communities referred neither to social constructivism nor to practice communities; but this need not entail non-application of the pedagogical methods springing from them. One of the foremost implications of social constructivism is that, as the world may be viewed as a social construct; there is not just one – and only one – objective truth. There are several – all depending on your choice of viewfinder and your perspective of the world. This approach is primarily realised at SSES and Twente. At SSES this point of view might even be seen as one of the centre's three basic pedagogical principles – called “diversity”. The term denotes not only the mix of subject fields, methods and points of view characterising the four universities but also the multifarious perspectives the students bring into the education – perspective is considered a very valuable input in the learning process. In the structuring of projects and exam papers much importance was attached to broad and open formulations allowing the students to include individual perspectives and areas of interest. This necessarily entails more than one correct solution. At Twente they were similarly heedful to encourage the students to carry out projects in cooperation with students from other departments.

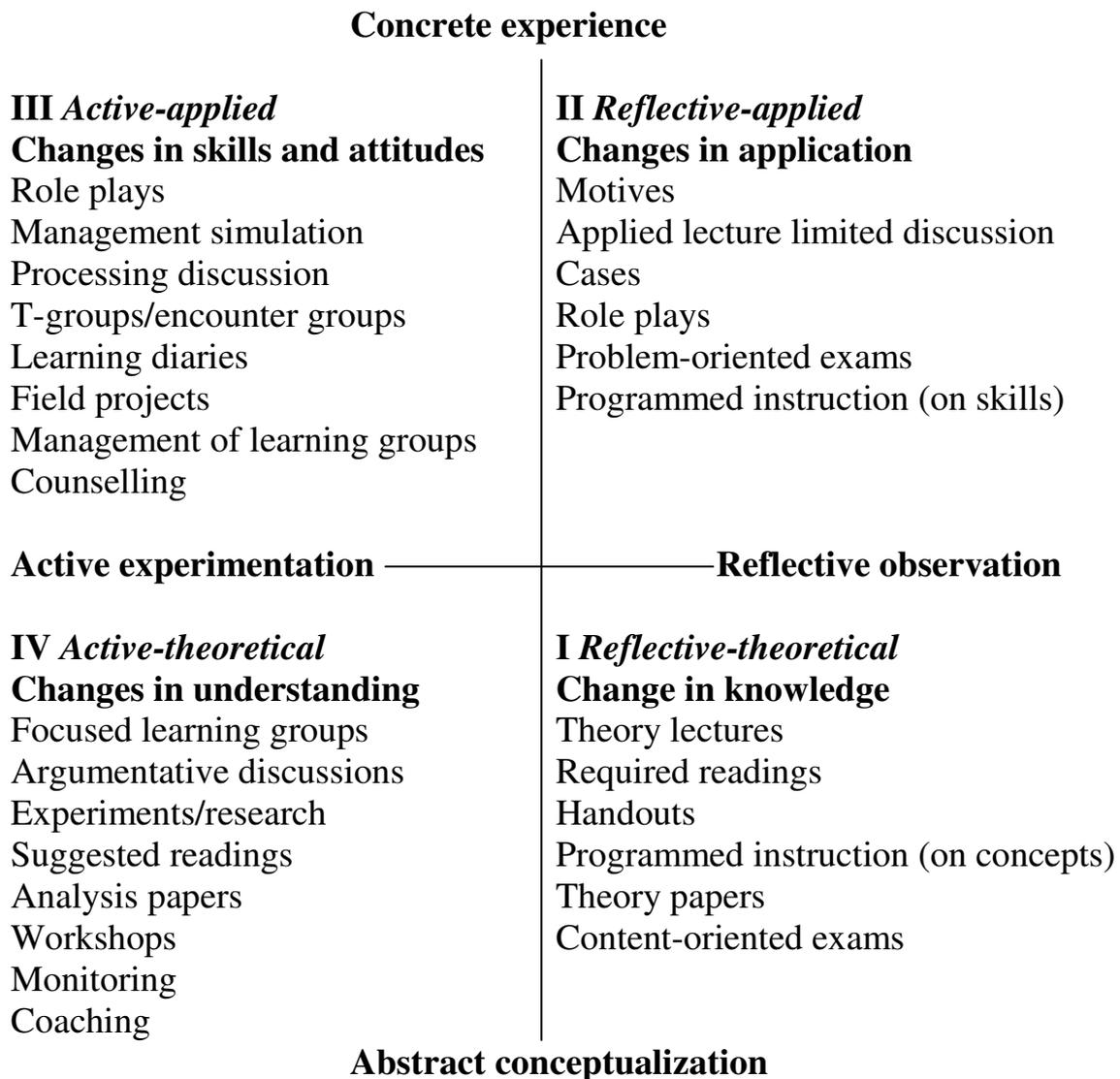
Concerning the four universities constituting our empirical material, theory appears to be quite high-ranking in the teaching – at least at UCE and SSES. Basically, the reason for this is that, at both places, entrepreneurship teaching comprises either concrete course content or an entire education and thus originates in an ordinary university tradition. Hence there is a fixed curriculum at SSES, and, likewise, UCE incorporates a great many theoretical subjects in their postgraduate and master's education. Twente emphasises that there is an increasing tendency to *also* rate theoretical application in connection with projects and business plan designs.

Albeit not part of the traditional university system, the Rostock ROXI-project provides courses for students, postgraduates and others with an interest in an entrepreneurial career. Thus, there are no compulsory formal rules or university norms. Moreover, the courses being relatively compressed and intensive further facilitates a flexible framework for experience-based learning with less weight on traditional university learning which is characterised by apprehension of a considerable general knowledge syllabus.

Let us return to the model developed from the Kolb learning style model. The learning styles have now been supplemented with pedagogical techniques. Accordingly, we are faced with a battery of approximately 30 dif-

ferent pedagogical techniques fairly evenly distributed among the four learning styles previously mentioned.

Figure 13. Conceptual grid of learning styles and pedagogical techniques.



Source: Garavan & O'Coinneide (1994.1: 9-10)

Applying the model typology to the four communities or cases investigated, it can be seen that several types are employed but in different combinations. At Twente University we observe the application of all four learning styles; whereas in Rostock they only use the two in the upper half dominated by 'concrete experience' learning styles (II and III). SSES and UCE apply both I, II and III. UCE is the university coming closest to the application of learning style I to a considerable degree – i.e. the traditional university pedagogy or, as it is labelled here, 'the reflective-theoretical).

Our findings are documented in the following where we mention the content of the methodology in question. Where recommendations are included they originate in respondent statements which have been incorporated into the typology. As earlier mentioned, this survey is not specifically aimed at presenting an exposition of the pedagogical techniques of the individual communities, and hence this data presentation should not be interpreted as a comprehensive illustration of the respondents' situation. Thus, there are certain to be more instances of learning style type I and, likewise, there is no example of typology IV. Even if it is a seldom applied style there can be no doubt that it is used more frequently than it appears here. We noticed the application of this learning style at Twente.

4.5.1. Learning styles and pedagogical techniques at the universities visited.

As an introduction to the more exhaustive overview, table 3. below illustrates the pedagogical techniques we were informed of as being in use in the four university communities participating in the survey.

Table 3. Pedagogical and didactic principles and methods at the four universities visited.

Twente University (NL)	Uni-	Rostock University (D)	UCE Birmingham University (UK)	SSES (S)
-coaching -short-term scholarships -project jobs - interdisciplinary courses -business plan -project-based subjects -student incubators		-simulation plays -structured subjects -business plans -holistic approach -personal development -entrepreneurial competence and behaviour	-ideas laboratory -thesis as business plan -general courses in economics -business plan competitions -the network as a market for exchange of courses etc.	-guest teachers -International/global approach -business plan competitions -action, diversity, imagination -panel debates -group work -etc.

Tabel 4. Clarifying outline of pedagogical principles and methods.

<p>type</p> <p>exempt from typology</p> <p>may be II (motives)</p>	<p>Involving personal student experience</p> <p>Explication and recommendation Need not be about business-oriented activities – the students may also have demonstrated ‘enterprising behaviour’ in other respects e.g. in sports clubs, in (student) politics, as lobbyists etc.</p> <p>Empirical observations Not referred to as a pedagogical practice. Most likely because, among other things, university classes are large, but maybe as much because there is no tradition for involving the individual students’ experience in study programmes.</p>
<p>type</p> <p>III</p> <p>active applied –</p>	<p>Practice</p> <p>Explication and recommendation Can either take place in more or less newly started businesses or in established companies (aimed at intrapreneurship). The business should provide the students with an opportunity to:</p> <ul style="list-style-type: none"> - perform tasks across functions and levels - encounter several organisation members and to acquire an overview of several organisation activities. <p>The university should demand reflection on the output of a traineeship e.g. by reporting and/or keeping a logbook (see below).</p> <p>Empirical observations This pedagogical method was not widespread in the university communities visited, but in Denmark it is applied at the Southern Danish University (SDU).</p>
<p>type</p> <p>II</p> <p>reflective-applied</p>	<p>Guest lectures</p> <p>Explication and recommendation Give the students an insight into the experience of others and can never replace personal experience. It is unlikely that more than very few students will start up their own business while still students. They need background knowledge and basic competence before it is justifiable to send them into an apprenticeship. In this respect guest lectures are opportune – especially during the initial stages of the education.</p>

	<p>Empirical observations This pedagogical method is applied in practically every visited university community.</p>
<p>type III active applied</p>	<p>Project work</p> <p>Explication and recommendation Should take place in cooperation with businesses or external organisations. It is important that the students not only analyse the current situation but also prepare amendment proposals and, preferably, participate in the implementation thereof. This allows the students to experience how taxing the remodelling of an existing organisation, or the creation of a new one, may be. The projects should carry some weight in relation to the study programme; it should be interdisciplinary and preferably interfaculty.</p> <p>Empirical observations Project work is applied at several of the universities visited. At Twente it is important that this takes place in groups composed of students with backgrounds in different academic fields – and preferably in cooperation with businesses. The education has been introduced at a university primarily centred on natural sciences and engineering. SSES likewise apply interdisciplinary projects in their teaching; but they appear to be less exhaustive.</p>
<p>type III active applied</p>	<p>Role playing</p> <p>Explication and recommendation Primary objective: to develop personal competence in students. Could for instance be role plays training the students in negotiation, selling situations, presentation techniques, etc.</p> <p>Empirical observations We did not come across concrete examples of this pedagogical approach, and this might be explained by the fact that it is foreign to traditional university teaching which is primarily concerned with subject knowledge and competence.</p>
<p>type III active applied</p>	<p>Logbooks</p> <p>Explication and recommendation This method cannot stand alone as this is where the students reflect on their experience and hence explicate their new knowledge in order that it does not remain silent. This is a very important aspect in a formal learning community since</p>

	<p>you cannot be credited with silent knowledge. Logbooks may be combined with traineeship, project work, simulation, observation, and small business start-up.</p> <p>Empirical observations None of the visited universities used logbooks. However, logbooks are – at least in Denmark – a very widespread and hence thoroughly tested pedagogical method. Like so many other things it is crucial that the individual student is motivated by the method as it requires much self-discipline and aptitude for reflection.</p>
<p>type</p> <p>II</p> <p>reflective-applied</p>	<p>Cases</p> <p>Explication and recommendation This method allows the students to apply their knowledge and competence in a concrete situation. There is a risk, however, that the cases become oversimplified to a degree where there is no “right” solution. And, likewise, authentic experience will never be acquired.</p> <p>Empirical observations As we know, this pedagogical method is most widespread within the field of business economics. Undoubtedly, there has been a rub-off effect on entrepreneurship teaching as it has very much sprung from this tradition. The visited universities were no exception.</p>
<p>type</p> <p>III</p> <p>active applied</p>	<p>Simulation</p> <p>Explication and recommendation The construction of more or less realistic worlds where the student may acquire experience within certain limited situations. May be PC-based. The limitations of such “micro business start-up” simulations are that they are not authentic.</p> <p>Empirical observations A considerable part of the activities going on at the ROXI-Centre in Rostock can be characterised as simulations where the students e.g. establish pancake businesses and thus learn something about order management, pricing, human resource management etc.</p>

type III active applied	Small business start-up schemes Explication and recommendation There can be no doubt that ‘starting-up own business’ during the student years is the ultimate pedagogical method in relation to education in/for entrepreneurship. It is, however, only a very small number of students who take the plunge. When all is said and done, it cannot be specified as a method since a university cannot operate with such an activity as a requirement. Empirical observations Twente University has established a student incubator with room for app. 15 businesses. Here office, Internet connection, etc. are free of charge. The businesses are intended to move out to e.g. a professional incubator/science park at the university campus when they are ready to do so. This typically takes place within one or two years. However, the number of students wanting to use the incubator has been smaller than expected.
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Garavan & O’Cinneide concludes by prescribing what they and others consider a true recipe for a pedagogical process, viz. a recommendation that the teacher or instructor work as facilitator for the learning process. This presupposes a high degree of exercises or focused feedback situations where the participant plays an active role. The traditional ‘listen-and-take-notes’ technique should consume a minimum of time. Succeeding this exercise participation, the participants should reflect on the experience acquired and generalise their experiences in small-group discussion. Groups are also expected to develop hypotheses on the basis of their experiences – hypotheses which can then be tested in the ensuing learning exercises. This way, all four learning styles come into use. The authors consider this typical – also in an entrepreneurial context.

4.6. PEDAGOGY’S CHALLENGES TO DIDACTICS AND CONTEXT.

At the end of the day, the ensuing problems will have to be dealt with. As Garavan & O’Cinneide point out, you should be aware of the fact that this learning process is considerably more time-consuming and hence more resource requiring than other, traditional, learning processes. Among other

things, they mention that feedback processes as a recurring feature of the learning/education process – through all the four stages – are time-consuming. Also, it will signify a heavy load on institutional resources because these methods presuppose small classes and hence more demands on physical facilities than usual. Thus we have returned to the introductory illustration of precisely this problem. If the desire to institute an improved education in entrepreneurship or for enterprising behaviour is to be realised, then there will be demands on context as well as on didactics.

CHAPTER 5.

ENTERPRISING BEHAVIOUR – BUT HOW?

This final chapter has two objectives: firstly, to place the context, didactics and pedagogy discussed into a coherent frame of reference; and secondly – on this basis – to present our conclusions and propose a set of recommendations for entrepreneurship education at university level, including the challenges facing the universities choosing to take on the role as entrepreneurial university.

The logic underpinning this report has been that, when contemplating changes in entrepreneurship education at the universities, there should be a convergence of the following three areas:

- the issue of shifts in the university context
- the issue of the didactics pertaining to entrepreneurship teaching at universities
- the pedagogical techniques applied – or should be applied – in this teaching.

This has been illustrated in figure 14.

Figure 14. The result of displacement in the educational system.

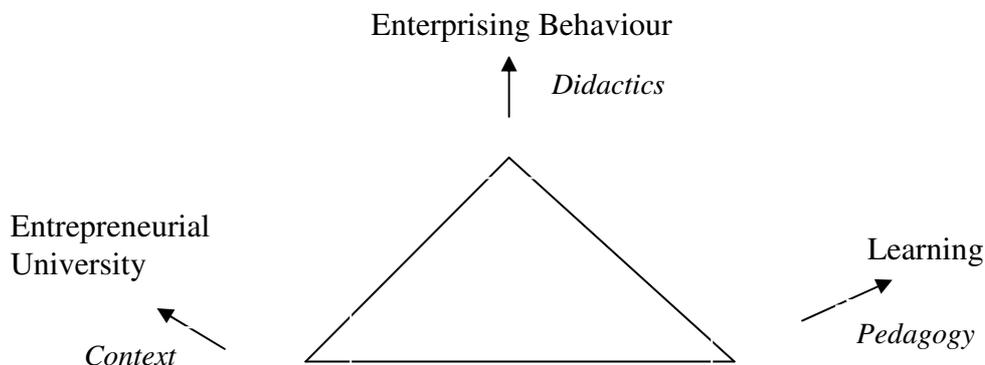


Figure 14 illustrates how the ideal constructs of entrepreneurial university, enterprising behaviour and learning are drawn together into an interdependent set of changes in university context, didactics and pedagogy.

In the following section we intend to delineate our main conclusions pertaining to each constituent while, at the same time, offering a series of normative statements originating in case- and literature studies respectively.

5.1. INTEGRATING CENTRAL CONCEPTS AND CORRELATIONS.

Both our case-studies of university communities in and outside Denmark and our literature studies have given rise to a series of problem issues and questions as to how university communities in general – and the individual university as such – might approach the challenges and opportunities connected with a development towards filling the role which will be unfamiliar to many universities, viz. the role of a so-called entrepreneurial university. As was to be expected, we cannot on the basis of our studies propose the ultimate, generalised model for how this development should proceed. On the basis of the experience harvested from universities already well into parts of this process, however, we believe to be capable of deducing some important patterns for consideration and, further, what in this respect should be considered expedient or less expedient behaviour.

We did not reach the conclusion that every university or faculty could or should be equally entrepreneurial; but we do find it important that the individual university take a conscious stance with respect to the role it intends to take on in relation to its surroundings. Through our iterative process of applying an abductive (inductive – deductive – inductive) method, we also believe to have deduced a general conceptual framework demonstrating the relevance of conjoining context, pedagogy and didactics where the objective is the creation of university communities developing graduates characterised by high degrees of enterprising behaviour and entrepreneurship (see figure 14).

Thus, the following will be a presentation of a series of interrelations comprised by the conceptual framework. The chapter offers some concrete advice which we hope may be a source of inspiration to decision-makers in the planning, development and management of various alternative configurations of the entrepreneurial university and in the development of educations in entrepreneurship. At the same time we hope that this may be inspi-

rational to the stakeholders and decision-makers constituting the so-called political framework conditions.

The issue of the future role of the universities and the ensuing challenges may be described as a complex of three interdependent problem issues:

- The contextual interaction between universities, business sector and political system provides the foundation for growth and innovation.
- The development of students' entrepreneurial competence presupposes didactic innovation of the academic content and of the theoretical foundation for entrepreneurship teaching.
- Teaching in and not just about enterprising behaviour and/or entrepreneurship presupposes other pedagogical models than those traditionally applied at universities.

The contextual interaction between universities, business sector and political system constitutes a significant challenge – albeit a challenge not without potential. The philosophy of the triple-helix-idea constituting the basis for the development of a close interaction in the shape of dialogue and partnership-like association between university and external stakeholder groups is seen as a means to diversify application-oriented research and to apply practice-related learning processes at the universities. There is, however, much to indicate that, to most universities, this entails new ways of thinking. A development towards the entrepreneurial university as compared with “the classical university” will, frequently, denote changes in universities' mission, vision, criteria of success, structures of incentive, organisation and in didactics and pedagogy.

The second challenge, or possibility, has to do with the issue of how the development of students' entrepreneurial competence requires a renewal of the academic content, of the theoretical foundation for the educations and of the teaching. In this respect many researchers of entrepreneurship education have argued for the relevance of applying a wider denotation of the entrepreneurship concept than what is traditionally understood by the term. In this connection it has also been questioned whether conventional management theory is a relevant frame of understanding for the implementation of entrepreneurial processes.

The third major outcome of our studies was deducing the need for incorporating a profound awareness of the interrelationship between subject field and ways of teaching into the planning of educations and teaching. This might be a matter of course but is, nevertheless, a complex issue. Thus,

teaching in and not just about enterprising behaviour requires different didactic and pedagogical models from those traditionally applied at universities. At a general level, the development of enterprising behaviour – and thus entrepreneurial competence (the motivation and talent for exchanging these features into the specific act of starting a new business) – might necessitate an increased integration of academic as well as personal development into the learning processes. Figure 14 illustrates these three realisations as the three parallel shifts of focus signifying the recurring conceptions and philosophy of this report.

Section 5.2 discusses the integration of the three issues, the idea being that if the universities intend to live up to their “new” role as entrepreneurial, these challenges should be taken into account as interdependent aspects. Whether it is at all the responsibility of the universities to fill this “new” role will not be discussed at length in this report. We shall, nevertheless, anticipate part of the answer since it is our belief and conclusion – based on our Danish and international case-studies – that every university per se is or should be entrepreneurial; but that they are or should be so in different ways. How this should be expressed will depend entirely on the individual university’s choice of mission, vision, strategy and objective. The mission, strategy and objectives preferred are influenced by – and will themselves exert an influence on – the context the university has “chosen” to be part of.

5.2. THE NEW ROLE OF THE UNIVERSITIES – FROM CHALLENGE TO OPPORTUNITY.

Subjecting the teaching initiatives launched within entrepreneurship in the Danish university communities to an analysis and subsequent comparison with similar initiatives at the institutions investigated outside Denmark, the basic philosophy seems to be the same. This is hardly surprising since a majority of the initiatives are inspired by the development in USA, and since a series of shared initiatives are rooted in the EU. Our studies of university communities outside Denmark reveal an all-embracing dissemination of education and teaching in enterprising behaviour and entrepreneurship across faculties or departments to be a lengthy process demanding the full attention, understanding and back-up on the part of the university management because it involves new forms of contact with the stakeholders in the surroundings; and because it presupposes new ways of internal cooperation within the individual university as well as in their relations with other universities. Besides, it will frequently require entirely new organisa-

tional structures – including new cooperation procedures. This will be exemplified in the following. For further information see e.g. Blenker et al. (2004b).

5.3. STUDIES OF FOUR EUROPEAN UNIVERSITY COMMUNITIES.

As revealed by this and various other reports, the Danish universities have launched several initiatives; but Denmark still has a lot to learn from experiences outside the country. We shall therefore present a summary systematising the experiences of the four European university communities mentioned in the preceding chapters. This chapter will focus on the organisational structures – based on cooperation between university communities – that may strengthen the dissemination of education in enterprising behaviour and entrepreneurship.

5.3.1. What can be learned from organisational structures?

Our study of the four European university communities draws a clear picture of organisational models suitable for the promotion of entrepreneurship teaching. As mentioned in chapters 1 and 2, the four university communities investigated are: University of Twente, the Netherlands (Twente); Universität Rostock, Germany (Rostock); University of Central England, England (UCE); and Stockholm School of Entrepreneurship, Sweden (SSES). It will not always be the university but rather its attributes which constitute the key aspect of these case-studies. As can be seen in the accompanying textbox the four cases represent considerable variations.

We thus encounter four highly different organisation forms. At all four institutions research and education in entrepreneurship are items high on the agenda, with Twente as the only one to explicitly formulate a vision to become acknowledged as an entrepreneurial university. The other three communities did not display similar supreme visionary formulations with respect to “the entrepreneurial university”. Yet, the development at Rostock shows that here, too, they are progressing towards this idea. The other two cases are, as mentioned, reflections of networks with SSES constituting the

Box 20.

resultant of the network, whereas UCE constitutes an equal part of the university network MERCIA Institute of Enterprise.

The four cases display a varied representation of issues for the understanding of merits and shortcomings with respect to the different organisational structures; and a study of their histories reveal the institutions to have undergone different processes.

The four cases are representatives of different varieties of the triple-helix-model, all based on the assumption that innovation, entrepreneurship and growth are created through an

interaction of three societal forces: academia, business sector and the political system. All the cases show the political system as being instrumental in the process, either – as was the case in Stockholm – by being supportive of the ideas and initiatives which the cooperating universities wanted to launch; or by taking on a decidedly initiating part – as was the case in Central England. Likewise, the Rostock development would not have got far had it not been for EU -and regional public funding. Historically, the development at Twente University is similarly based on three parties as pre-eminent originators of the current state of affairs. Thus, the four cases may be referred to as variations of the entrepreneurial university; but, as mentioned, Twente is the only one to explicitly word this as a vision. Of the three remaining, SSES and UCE are both part of networks – each in their own way. Rostock University also defines itself as an entrepreneurial university community and has received both acknowledgement as such and funding for entrepreneurial purposes.

The development of the four university communities often began by a few members in the management or among the teaching staff seeing interaction with the regional business community as a means to innovation, development and growth. There are, however, significant differences in the extent to which the initiatives are implemented into the attitudes, culture and behaviour of the individual universities. In certain cases the university objec-

Four different organisational structures

- Twente is the only case demonstrating concord between university organisation and our objective of investigation.
- Rostock University constitutes an example of a detached centre affiliated to the university.
- UCE in Birmingham is part of a network established by nine universities each having their own entrepreneurship research - and educational centre.
- SSES is a unit or centre established by four universities and schools in Stockholm also – in varying degrees – preoccupied with the field of entrepreneurship.

tives and strategies constitute a close interaction with the business community for purposes of a mutual exchange of services. In other cases the university may only have offered entrepreneurship programmes as part of the curricular portfolio, and the teaching may have been case-based.

The persons responsible for the entrepreneurship teaching frequently have a management or technical background. Gradually, the interest in entrepreneurship has gained foothold at the university eventually growing strong enough to attract resources and establish an actual “centre for entrepreneurship”. The formation of such centres frequently constitutes the basis for cooperation with the business sector and others occupied by entrepreneurship.

The case-studies further show that the development of the so-called entrepreneurial university is a lengthy process where one fundamental prerequisite is the capacity for entering into an interactive relationship with stakeholders in the triple-helix-model. One challenge among several is the fact that this interaction requires different ways of thinking, different organisational structures and different criteria of success than those prevalent in the university system. It requires backing and insight from university managements.

The conclusion is that the entrepreneurial university by definition cooperates with external stakeholders for purposes of shared innovation, flexibility and creativity but also for purposes of gaining access to external sources of finance. This philosophy plays a predominant part in the Danish Government’s plan of action for the Danish universities “from idea to invoice”. Case-studies show that cooperation between business community and university can be advantageous but that the two parties may have different time frames and – in this connection – investment frames. The condition for cooperation and networking has to do with the university’s capacity for making itself visible as a credible and attractive co-operator for the business sector. Whereas the business sector, on the other hand, should perceive interaction with universities as a process where you do not get results on the bottom line overnight, but where, by applying a clear and patient strategy, you gain access to a knowledge-base which might be a precondition for future development. As to the responsibilities of the public sector, there should be a development of framework conditions and a launching of initiatives which could be instrumental in kick-starting this developmental spiral. The slogan “innovation and growth through networking and cooperation” may be realised if the philosophy and relations constituting the triple-helix-model are made operative. The accompanying textbox contains

the formulation of a series of questions which the individual university will have to relate to.

5.3.2. The impact of context on teaching and research.

All the four universities are focused on interacting with the business community and other educational institutions. Frequently the composition of educational programmes is focused on what may be relevant and useful to the local business community. The objective of entrepreneurship teaching is for the students to develop academic and personal competence with respect to the performance of entrepreneurial actions, and this is most frequently expressed in the preparation of a business plan.

The teaching staff typically comprises a combination of university researchers and representatives of the business sector. A flexibility is incorporated into employment structures thus allowing for interim teaching positions for business people while researchers get the opportunity to experience business life. At Twente, for instance, it is possible for potential entrepreneurs to be employed at the university while working with the development of their idea. Here they participate in the teaching as both teacher and student, and university resources and competence are at their disposal for the continued development of their idea.

Most universities and their associated researchers – highly empirically -and application-oriented in their work towards solving concrete problems for the business sector – are operating within limited time frames and hence forced to decide where their commitment should lie. Paramount goals focused on satisfying the relevance -and utility criteria of the business community by specific problem-solving may provide the university as well as the individual teacher with additional funding; yet this could also be both time-consuming and “research displacing”. Alternatively, a university

Box 21.

Central questions for the universities

- How are stakeholders of the triple-helix model motivated for seeking more knowledge about each other for purposes of dialogue?
- How is the basis for the establishment and launching of relevant developmental triple-helix spirals identified and coordinated?
- How do stakeholders recognise the aptness of “patient resource application”?
- To what degree is there a requirement for an acceptance of new benchmarks and new criteria of success as compared with those ordinarily applied at universities, in businesses and in the public sector?

could opt for focussing on conventional academic value norms and thus generate research of high international generalisation value. Which of the alternatives should universities choose? Even large universities seem to be forced to take a stance. Case-study experience shows that university managements should formulate unequivocal objectives and strategies for positioning the university within this spectrum. Further, they should establish structures, employment relations and incentive systems supporting their choice.

5.3.3. Which entity to focus on – and what will be the strategy of this entity?

In all four cases, the development did not get under way until a few key players (the passionate spirits) succeeded in establishing a centre construction and hence in the promotion of visibility and in the creation of a basis for attracting resources or for qualifying the centre for entering into cooperating relations with other institutions. This can only happen when the institutions in question can be convinced that, in the long term, interaction will constitute a basis for growth and innovation. In all four cases the universities have succeeded in obtaining high degrees of external financing which is why they rank among the more superior in Europe with respect to entrepreneurship. The examples in the accompanying textbox illustrate how choice of entrepreneurship entity interacts with university strategy.

As mentioned, this brief précis of the four communities' foundations and structures ranges over four very different organisational structures. Two of the cases are universities, whereas the other two are network communities. SSES represents the core of the network, fulfilling a supportive function for the members to draw upon – through cooperation with the network institutions, though. UCE is a member of a network construction where the UCE is obliged to contribute to the partnership with ideas and initiative as well as to display independent local initiative. In connection with the launching of concrete projects and initiative, the UCE has to apply for resources at the network.

Box 22.

Examples of entrepreneurship entity and university strategy

- As previously mentioned, Twente is characterised by having a university executive board explicitly formulating a strategy directed towards becoming an entrepreneurial university. The NIKOS research group has participated in the development of a cooperating relationship with other departments within the university and with institutions of research and education in and outside the Netherlands.
- SSES was established on the basis of experience gained at the Stockholm School of Economics. It is a centre backed by four institutions. SSES is expected to take the initiative to offer various kinds of entrepreneurial education programmes to students at the four institutions involved in the consortium.
- At UCE they have a research centre, ERDC, working with entrepreneurship; they are focussed on the development of small and medium sized enterprises (SMEs) and on business development in general. For several years now, the ERDC has cooperated with local forces, and this – together with EU-funding – has made way for the implementation of a series of initiatives. The university was therefore equipped to participate in the establishment of MERCIA Institute of Enterprise (MIE), a partnership comprising nine universities operating on the basis of ideas developed at meetings between teachers from the nine partnership institutions. Subsequently these ideas are adapted to suit the individual communities; and, eventually, the funding for development and implementation can be applied for at the MIE.
- Universität Rostock in Germany is a classical university where one professor of business pedagogy together with regional political interest groups embarked on a developmental process. This cooperation resulted in the establishment of Institute for the Development of Competence (HRD) funded by external stakeholders, university management and EU-grants. This project is directed towards developing skills for becoming self-employed.

5.3.4. What can be learned from didactics and course content?

This section discusses how course programmes in entrepreneurship are structured in the four cases. Objectives, target group and context are influential factors in the structuring of entrepreneurship education. As has been observed, there are significant differences in the focus, content and in the choice of pedagogical methods.

At UCE they have opted for offering cohesive MBAs and postgraduate entrepreneurship educations, teaching both about and in entrepreneurship with a management theoretical foundation as the primary basis for innovation and business development. The pedagogical approach is characterised by ideas laboratories aimed at developing personal student competence in the creative handling of innovative projects.

At the University of Twente the educational point of departure is based on practical problem-solving. Here they have a flexible modular structure of entrepreneurship education offering the students a comprehensive curricular portfolio to choose from. Apparently, it is a progressive course programme commencing with basic courses. In several instances the point of departure is founded in management theory viewed from an “entrepreneurial” perspective. There is considerable focus on business planning. In addition, Twente students of the natural sciences or engineering are offered a “minor” – a subsidiary subject in entrepreneurship. Besides this, a series of courses are directed at people in the local region wanting to achieve competence in connection with the establishment of their own enterprise. Twente typically combines content and pedagogy in accordance with different educational objectives and target groups.

SSES offers a programme comprising four core subjects at the four network institutions. The students are free to choose the entire programme or just parts of it, and it is possible for them to specialise in entrepreneurship relative to various branches.

Rostock offers courses targeted at the development of personal enterprising behaviour capacities. This is considered a prerequisite for the development of an entrepreneur. The educational process focuses on the individual as a person, and the course elements constitute subjects such as creativity, ideas development, personal development and the capacity for networking.

Box 23.

Didactic statements:

- A portfolio of reciprocally stimulating educational elements appears recommendable. This presupposes disclosure of the competence requirements of the various target groups.
- It is difficult to cover the entire spectrum of relevant educational tasks relative to potential entrepreneurs. In most cases it will have to be a matter of choice.
- Teaching about or in entrepreneurship requires different pedagogy and didactics.
- The development of generic models for educational programmes in entrepreneurship should be based on an integrated approach encompassing context, target group and objective.

The accompanying textbox lists a series of statements deduced on the subject of didactics and course content.

5.3.5. Pedagogy and choice of organisational model.

The four case-studies show that if the universities wish to live up to the role as “entrepreneurial university” this requires specific sets of learning processes, culture and focus – together with the establishment of “new” relations between internal and external interest groups. Our studies further reveal that teaching in and not just about entrepreneurship requires different pedagogical models from those traditionally applied at institutions of higher education. To develop initiative people who possess an insight into opportunities, who are motivated and enterprising – whether this enterprising behaviour be realised by an innovative employee in an existing business (intrapreneurship) or by an entrepreneur – is something that presupposes a particular pedagogical focus.

Thus, focusing on imparting academic knowledge does not suffice. It is necessary to plan course content and teaching forms supportive of the specifically desired competences. The adjoining textbox lists a series of recommendations deduced from our case-studies.

Box 24.

Pedagogical recommendations deduced from our case-studies

- Didactic and pedagogical considerations constitute a central aspect in the planning of entrepreneurship education. There is much to suggest that entrepreneurship education requires learning concepts different from conventional kinds.
- Idea laboratories can be paired with theory on entrepreneurship in order to mediate entrepreneurship competence.
- The diversity concept, encompassing the idea of consciously working towards an exploitation of participants’ differences in the planning of course programmes, is considered a pedagogical challenge.
- One pedagogical method could be student involvement and practice- and problem-oriented learning processes in practice communities.
- Entrepreneurship teaching puts demands on the university teacher’s interdisciplinary and pedagogical competence. Since these qualities are seldom present in the single individual, teamwork cooperation is therefore the most suitable solution.
- Entrepreneurship education opens up for a new understanding of university pedagogy in general.

5.4. AN INSPIRATION FOR DANISH UNIVERSITY COMMUNITIES – COOPERATION AND ORGANISATION.

The case-studies being aimed at a generation of ideas and an unveiling of concepts have resolved some of the issues relating to the general connection between context, didactics and pedagogy. Yet the cases also gave rise to a series of new questions which might be interesting in connection with the challenges currently faced by Danish universities. The following presentation lists the pros and cons of the organisational forms “chosen” by the university communities outside Denmark.

Organisation as a network of independent universities

Example: Stockholm. In Denmark, Centre for Entrepreneurship in Aarhus is a cooperation between local institutions of education and could be compared with Stockholm.

<p>Merits: in theory it represents a reasonable potential for volume and rapid dissemination. This is, however, dependent on the commitment of the individual parties and on participant influence with the individual partners.</p>	<p>Shortcomings: coordination costs. Evening out the level. Rests on volunteers and passionate spirits. Seldom stimulates innovative thinking in staff of partnership institutions.</p>
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Organisation of a central pooling of funds initiating cooperation

Examples: Mercia in the UK. The Danish Academy for Entrepreneurship (IDEA) could be seen as an example of this kind of organisation.

<p>Merits: money might be an obligating motivator for cooperation. Funding entails feasibility of novel organisation with respect to the chosen concept and with respect to pedagogy and didactics.</p>	<p>Shortcomings: presupposes a strong and visionary management with unwavering perceptions of what developmental projects should be considered “worthy of support”.</p>
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Organisation of a university with the objective of becoming an entrepreneurial university

Examples: Twente University. In Denmark, Aalborg University could bear resemblances to this structure

<p>Merits: where university managements have a definite prioritising there is potential for explicit strategy, management and allocation of funds.</p>	<p>Shortcomings: may have a limited perception of preferred behaviour focused on entrepreneurship only. Focus on business start-up, on business plans, on spin-off and on incubator communities.</p>
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Entrepreneurship unit internally organised at the university – linked with regional partnerships

Examples: Rostock/ERDC. CESFO (Centre for Entrepreneurship and Small Business Research) at University of Southern Denmark might resemble this structure.

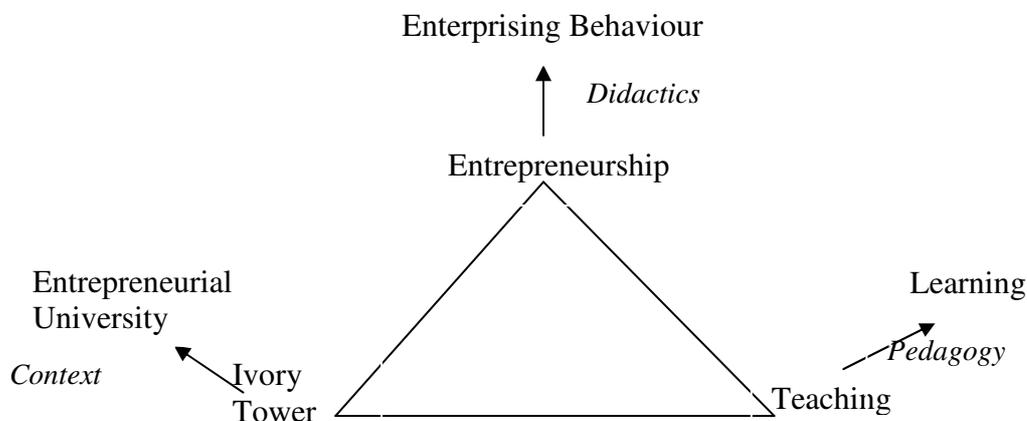
<p>Merits: internal unifying strength. Rests on agreement on idea and principles. Compatible with development of research. Penetration power in the region.</p>	<p>Shortcomings: No penetration power in the university system. Might become sectarian</p>
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As demonstrated in the preceding, there are various options for the structuring of university communities where the objective is to promote teaching and research in entrepreneurship. One option cannot be deemed preferable to the other. Each has its strengths and weaknesses.

5.5. A COHESIVE FRAME OF REFERENCE FOR ENTREPRENEURSHIP TEACHING.

Figure 14 represents the comprehensive frame of reference we have deemed suitable for consideration in the university’s structuring of reflections pertaining to the development of postgraduates with entrepreneurial competence.

Figure 15. A model representing the aggregate of the report’s shifts of focus.



The frame of reference is based on the following three principal conclusions of our case- and literature studies:

- The contextual interaction between university, business sector and political system may constitute a foundation for growth and innovation.
- Development of students' entrepreneurial competence presupposes a development and renewal of academic content in and theoretical basis of entrepreneurship teaching.
- Teaching in enterprising behaviour presupposes different didactic and pedagogical models from those traditionally applied at universities.

These observations give rise to cogitation about how context, didactics and pedagogy can be interwoven. It is our hope that this model may be a source of inspiration in the planning and management of the universities.

5.6. CHALLENGES AND EXAMPLES OF OPTIONS FOR ACTION.

The individual university's considerations with respect to entering into one of the organisational structures listed above should constitute an element of the university strategy and thus be directional in the decision as to how the university intends to strengthen entrepreneurship. With strategy and reflection concerning the preferred relationship to the university's surroundings as points of departure, the task will encompass a probing into potential options for cooperation as into organisational structures. Different organisational structures entail different access to resources but also require different kinds of competence. Filling the role as entrepreneurial university requires internal shifts in educational focus and in organisational structures – new approaches to pedagogy and didactics paired with new incentive systems with respect to staff. The following section further explores some of the challenges facing the Danish university system and also suggests some strategic options.

How to secure increased breadth and impact in future initiatives?

There will be no impact unless Danish university communities make a move to unify some of the many partial attempts at bringing entrepreneurship into the educations. For the undertakings to have breadth the point of departure should be the wider concept – enterprising behaviour. There will be no impact unless forces be joined in a suitable organisational structure. The establishment of IDEA (the Danish Academy of Entrepreneurship),

based on the interaction between many parties of the three triple-helix stakeholder groups, is one significant step in this direction.

How to continually develop pedagogy within entrepreneurship teaching?

In general, our case-studies did not expose much reflection on the interrelation between entrepreneurship education and pedagogy. This is in itself interesting. The conclusion seems to be that while entrepreneurship constitutes an object of increased interest in university communities; that despite an ongoing preoccupation with contextual imbeddedness in university teaching; and in spite of considerable current efforts with respect to the development of elements of content relative to this teaching – yet the pedagogical issues related to this transition receive only scant attention, however. Among the four cases we studied, Rostock University was the only one to dedicate any attention to issues of a pedagogical nature.

What should the institutional consequences be?

The Danish political body is excited about the idea of the new university's role. They are positive towards universities becoming active players in their field. The triple-helix philosophy has caught on among the trend-setting political communities and both networking and inter-university cooperation about entrepreneurship education receive much attention. The drawback, however, is the sparse awareness of issues concerning the tackling of institutional limitations and the university system's cultural inertia. A more accessible university will require more resources than a conventional university, and existing incentive structures do not reward such behaviour.

5.7. OPPORTUNITIES AND THE ENTREPRENEURIAL PROCESS.

Enterprising behaviour revolves around dispositions and talents for seeing new ways of doing things – combined with the urge to develop these opportunities. The driving force behind this process will often differ from one individual to the other. University teaching sees entrepreneurial competence as a mix of innate and cognitive skills. A desire to promote a broad form of enterprising behaviour would imply that aptitude for opportunity development is fundamental and, hence, that it should constitute a competence goal in any university education – irrespective of subject field.

The entrepreneurial process may be sectioned into a series of sub-processes with opportunity identification constituting the central element (Shane 2003). Working towards a strengthening of student competence, the individual university should display an awareness as to which stage in the

process to aim for and also which kind of entrepreneurship the university wants to promote.

5.7.1. Several kinds of opportunity – several kinds of entrepreneurship education.

Identification and exploitation of new opportunities presuppose a perceptive and interpretative alertness and receptiveness towards environmental signals – and also a willingness to respond to them. This could for instance mean reacting upon weak signals not detected by others – or perhaps not dared reacted on by others. The objective could be a honing of students' capacity for identifying opportunities. A realistic training in this respect would frequently require interaction with the community which would develop students' competence in a relevant and realistic context. The goal could either be the development of enterprising behaviour in general – or, more specifically, the development of an inclination to, and capacity for, starting up their own firm (entrepreneurship).

The economists of the Austrian School (Kirzner 1973; Schumpeter 1934) have contributed to the understanding of entrepreneurial processes and opportunities. Kirzner's, as Schumpeter's, point of departure is that society is continually under development, and that this gives rise to opportunities that may be exploited. Schumpeter's entrepreneur is a person who through innovative actions – seen in a wide perspective – causes imbalance in society; whereas Kirzner's entrepreneur, "on the contrary", has a capacity for reading the imbalance in the dynamic societal development whereupon he, by means of his entrepreneurial actions, pulls society towards equilibrium. According to Schumpeter's definition, the entrepreneur's creation of innovative opportunity and incentive is based on fundamentally new information and new knowledge. The entrepreneurial action cancels out the environmental equilibrium. In comparison, Kirzner (1973) sees the entrepreneur as a person who does not create entirely new opportunities and who does not build on absolutely new knowledge. Rather, the entrepreneur possesses some unique qualities for detecting opportunities prior to anybody else (alertness). Only the very few possess this capacity for reading new opportunities into their surroundings^{**}.

When structuring the content of entrepreneurship teaching, it is not without significance whether this has been inspired by Schumpeter's or Kirzner's perception of the entrepreneurial process. Schumpeter focuses on the crea-

^{**} see Kjeldsen 1991a, 1991b, 1992, 2002 for a survey of various paradigmatic and theoretical approaches within entrepreneur theory

tion of new opportunities, whereas Kirzner focuses on the detection of existing opportunities. Kirzner's entrepreneur "only" requires a special capacity for interpreting information already in existence, while the Schumpeter entrepreneur constitutes the basis for the emergence of entirely new opportunities. The individual university desiring to develop an entrepreneurial culture through entrepreneurship education may thus seek inspiration in both understandings – all depending on whether the goal is an incremental or a radical strengthening of innovation.

5.7.2. Different entrepreneurial personalities – different kinds of pedagogy.

The entrepreneur being "better than others to identify a opportunity" may be owing to the fact that the entrepreneur is equipped with a considerable intellectual capacity for absorbing things in combination with a comprehensive knowledge relevant to the entrepreneurial opportunity. The entrepreneur gains informational access through conscious or intuitive search processes and through his contact with social and professional networks. Education and teaching may be means to search-process training – and to the establishment of relevant professional and social networks. The more general student experience formation may be developed through education – while personal competence is developed through teaching. A university education might, however, pull in the opposite direction: a heavy focus on the analytical and less on the creative; a high degree of focus on the exact, on current states of affairs, on the observable and less on the uncertain, on the new and unknown – on those traits characterising an entrepreneurial decision-making process.

Several studies have tried to analyse the personal traits that entrepreneurs might have in common. Such profiles have been accused of being more detrimental than beneficial to the efforts of understanding what prompts an entrepreneurial process. The criticism voiced: each entrepreneurial case is unique and influenced by an impressive number of factors with only a few pertaining to the person behind (Gartner 1988; Kjeldsen 1991, 2002). Nonetheless, after forty to fifty years of research and criticism, certain features still appear to be reliable. This is for instance true of McClelland's (1961, 1967) theory of the need for achievement as an expression of a person's desire to accomplish something quite extraordinary in a competitive situation. McClelland's typical entrepreneurial traits are expressed in the adjoining textbox.

To the extent that such traits constitute a basis for the development of successful entrepreneurs, they should have some impact on entrepreneurship education. The pedagogical challenge lies in the structuring of teaching methods supportive of such traits and drivers while simultaneously developing students' capacity for building and applying academic and social relations and networks. In this respect the pedagogical challenge lies in the development of these individual drivers – while simultaneously building competence for entering into cooperation with a willingness to share competence and knowledge.

Box 25.

McClelland's entrepreneurial traits:

The entrepreneur

- has a marked desire to plan and implement his resources in order to achieve his goals – and he wants to do so at his own risk;
- has a well-developed faith in his own capacity for influencing his opportunities and for achieving his goals;
- desires a high degree of feedback – the sensation of success is instrumental in boosting the entrepreneur's level of aspiration
- is future- and action-oriented
- is not particularly risk-taking but very ambitious
- sees money and economy as parameters of success

5.7.3. Different entrepreneurial academic skills – interdisciplinary pedagogy.

Through their research, the universities produce knowledge which could per se constitute a basis for entrepreneurial opportunities. There is, however, much focus on the fact that these opportunities are seldom optimally exploited. A higher degree of openness and a sharing of knowledge across the often trench-like partitions into faculties and departments could prepare the ground for improved opportunity identification -and development. This might be realised through multifaculty initiatives. However, this represents yet another pedagogical challenge: working with highly heterogeneous groups of students across subject fields and in cooperation with teachers of entirely different backgrounds.

5.8. RECAPITULATION AND PERSPECTIVES.

The working conditions reigning at Danish universities and university educations are undergoing a rapid development. The same is taking place on a global scale. Universities are forced to evaluate their position as organisa-

tions of growth creators for their community. The universities' development contracts are focused on their capacity for producing and communicating knowledge for the benefit of societal development, growth and welfare. Besides the generation of forceful academic competence within the various research areas, these targets may be realised by means of creativity, flexibility and innovation – i.e. by means of academic as well as entrepreneurial prowess. As already mentioned, this requires that the individual university choose its own variant of “entrepreneurial university”. All roads lead to Rome but the choice of road is important. Other universities or university networks may be sources of inspiration; but at the end of the day it will be external and internal factors – context and strategy – that will be decisive when choosing the most suitable road. Some of this report's major conclusions are summed up below:

- Is it possible to be an entrepreneurial university without teaching in or about entrepreneurship? Yes, it is.
- Is it possible to teach in or about entrepreneurship and not be an entrepreneurial university? One prerequisite for the development of education and teaching in entrepreneurship is that the university is, to some extent or other, entrepreneurial. It is, however, feasible to offer courses about entrepreneurship on a purely abstract and theoretical basis at a non-entrepreneurial university. Ordinarily this would “only” generate an academic interest in the subject field without enhancing interest in or providing competence in the development of new opportunities – comprising business opportunities.
- What will be the new demands to the development of entrepreneurial skills in students as compared with what we usually consider educational competence goals at universities? In decisions relative to educational content, pedagogy and didactics, there should be an increased focus on personality development aspects. This relates to every kind of university education – be it within theology or medicine, within technical or economic subject fields. The key issue is whether the purpose and objective of the learning process is that of developing entrepreneurs or enterprising behaviour in general.

Consideration of these issues should be governing the choice of content on which the learning process will be based. The theoretical foundation should depend on the purpose. Alas, there is so far only a meagre selection of theories and conceptual framework supportive of an education in entrepreneurship. The theories and models known from economics and manage-

ment are not recommendable for innovative or inventive thinking. What is needed here is new philosophies and the development of frames of reference.

University managements are faced with a series of strategic issues concerning the development of educations with more entrepreneurial content. These can be summed up as follows:

- Every university management is forced to take a strategic stance as to the degree in which – and the rate at which – the university desires to develop towards becoming entrepreneurial. This decision is the result of a global and national political demand forcing institutions of research and education to rethink their role. External majorities on the executive boards of the universities will mean that development contracts between the university and the Danish Ministry of Science, Technology and Innovation will be more focused on delineating how the universities plan to prioritise that part of their role. The individual university should plot its role and evaluate the ensuing consequences for research and education. It is not feasible for all Danish universities to define and comply with identical entrepreneurial roles.
- Filling the role as entrepreneurial university presupposes a creative and flexible interaction with stakeholders in the community. This interaction will entail requirements of, as well as access to, new resources and competences. The university will need to analyse and comprehend the opportunities inherent in the triple-helix-model and also to plan for its future position in this. Frequently, the parties of the triple-helix-model will have to yield to each other owing to differing criteria of success. This will be particularly relevant on matters concerning the rate at which the parties expect to harvest the outcome.
- Education in and not just about entrepreneurship should be process-oriented and address multi-disciplinary issues – i.e. it should embrace problems ranging beyond the academic specialisation characterising the scientific community engaged in research of high international standards. This signifies a paradoxical situation and thus necessitates changed structures of cooperation and organisation, new incentive structures, new teacher roles, and learning processes different from those traditionally applied at universities. The double role as both researcher and teacher will necessitate the incorporation of academic as well as practical purposes and objectives into the teaching. This presupposes flexibility in the university employment struc-

ture and also a modification of the course credit transfer system.

- In addition to the academic focus, university educations should also incorporate personality developing elements in order to further enterprising spirit, aptitude and urge. Some of the key words are creativity, capacity for detecting new opportunities and the inclination to pursue them. This requires that the educations be developed on consciously established principles regarding purpose, context and target group. Teaching in and not just about entrepreneurship is a pedagogical process building on a combination of practical and academic didactics; a process presupposing special requirements to the organisation of the educational community. The managerial task presupposes a consciousness of the multifarious possibilities inherent in the multifaculty university. In the business sector there is an increasing demand for the development of new educations across classical research and educational boundaries, and there is – at the same time – a pressure from political quarters for such renewal – for instance within the medico-area, biotechnology and nanotechnology. The knowledge generated in connection with these technologies could be commercialised through entrepreneurship educational work.
- Most entrepreneurship educations and course programmes are based on economic -or management theories. This may, in fact, be decidedly obstructive where the objective is aiming at a strengthening of the capacity for identification and development of opportunities beyond existing frameworks. There is a marked need for developing an action-oriented entrepreneur theory if university teaching is to contribute to the development of knowledge intensive entrepreneurs.

Within OECD the development towards the entrepreneurial university and the increased focus on teaching aimed at enterprising behaviour and entrepreneurship are undergoing a rapid development. In Denmark, too, this development is gaining speed through various political initiatives. Thus the introduction of a new university act affecting the composition of universities' executive board where there is now an external majority; the establishment of the Danish Academy for Entrepreneurship and new patent legislation, all illustrate a shift in focus within this area.

We hope that this project, the series of reports, and the articles published in Denmark and internationally have contributed as sources of inspiration for the stakeholder groups involved – stakeholders whose interaction is a prerequisite for success in the tackling of this development. Even though each university is in a unique position, and even though their contexts vary, thus

complicating the structuring of generalised solutions, it is our belief that we, in Denmark, could learn from experience abroad and from each other. The challenges are considerable; but we need to seize the opportunities now being created.

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