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Rostocker Arbeitspapiere zu
Wirtschaftsentwicklung
und
Human Resource Development

(Rostock Working Papers on
Economic and
Human Resource Development)

Nr. 29

Christoph Diensberg, Yiannis Fessas (eds.)

Developing Practices and Infrastructures for
Entrepreneurship Education and Training in
Europe

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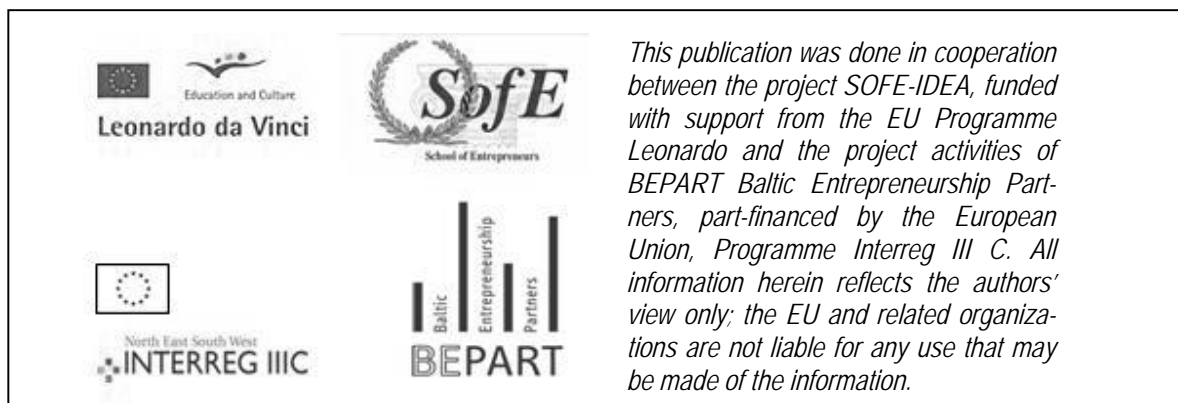
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Rostock 2008



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Foreword

This collection of working papers was done in the context of two European projects for entrepreneurship promotion and education:

- SOFE-IDEA (School of Entrepreneurs – Integrated Development of Entrepreneurial Achievers), funded with support from the EU-Programme LEONARDO,
- BEPART (Baltic Entrepreneurship Partners), co-funded by the EU-Programme Interreg III C.

When meeting at the Final Conference of the SOFE-IDEA project in November 2007 we thought it would be stimulating to bring together articles from actors in both projects. Thus, some of the papers at hand reflect the work of SOFE-IDEA and of BEPART. Other contributions also point at neighbored projects or develop even further and general ideas. The common theme is entrepreneurship education, which is top on the policy agendas around Europe, a pan-European task so to say. With its cultural diversity Europe has also a great diversity of entrepreneurial potential, of the ways how to promote it and of educational concepts. This diversity is a resource to be utilized to further develop practices and infrastructures for entrepreneurship promotion.

We divided the collection of papers at hand into two main sections.

Part I: Entrepreneurship Education – Outcomes and Conclusions from Project Work

These contributions approach their topics with a strong link to proximate application in a concrete project work or educational program for entrepreneurship. *Christoph Diensberg* introduces “Ten Propositions: Towards Entrepreneurial Regions” which were developed in the project BEPART and which aim at giving general orientation for entrepreneurship promotion. *Erberto Sandon and Dimitris Karaboulas* present the background, focus and concept of the project SOFE-IDEA, followed by the contribution of *Dag Ofstad* who poses the question of competency testing for entrepreneurs in a formal education or training programme for entrepreneurs. The perspective of concrete skills and competences for entrepreneurs mark also the final sections of the paper by *Yiannis Fessas*, after highlighting first some general challenges for developing entrepreneurship in Europe. *Made Torokoff and Tönis Mets* show us the development, implementation and analysis of a training course for Estonian teachers within the project ENTEDU done at the University of Tartu. Science based entrepreneurship and early support for high technology small firms of a ‘Master of Enterprise’ at the University of Manchester are topic of the contribution by *Pannikkos Poutziouris*.

Part II: Entrepreneurship Education – Findings and Conclusions from Further Research

Here, three papers with a more general approach on entrepreneurship education and promotion are presented. *Paula Kyrö* examines in her contribution basic, historically and culturally grown educational concepts and learning paradigms which knowingly or unknowingly shape the way we educate or build educational concepts, and she draws conclusions for entrepreneurship education. The nature of ‘Entrepreneurial Universities’ as a challenge is subject of the article by *Peter van der Sijde*, who analyses the characteristics of the two different worlds of science and of commercialisation. He concludes to couple the strengths of both worlds by working together. Finally, *Hans Ruediger Kaufmann* highlights the entrepreneurs’ function to capitalize on disequilibria, but then leads us into situations when entrepreneurs face an application gap of this disequilibrium role, for example if

Towards Entrepreneurial Regions: Ten Propositions for Successful Entrepreneurship Promotion and Education

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1. Introduction

BEPART (Baltic Entrepreneurship Partners) was formed in the year 2004 as a network of 12 organizations in the Baltic Sea Region, and is co-financed by the European Program Interreg III C until December 2007. The partners from 8 different countries are universities, incubator-organisations and a regional development agency. When starting the operation, the network formulated as key-problems (Baltic Entrepreneurship Partners 2004):

- the need for “more effective entrepreneurship promotion and more qualified personnel for entrepreneurship education”, and
- the situation of “little experience or information exchange on approaches and results between regional policy makers, universities and linked initiatives to foster entrepreneurship”.

Thus, BEPART aims at “increased efficiency and impact of entrepreneurship promotion at universities and within local/regional networks” (Baltic Entrepreneurship Partners 2004), within the following two fields:

- entrepreneurship education and training, and
- entrepreneurship promotion within regional development policies.

In terms of work and philosophy, BEPART combines academic perspectives and practitioners' views on the field of entrepreneurship development. It is not surprising that next to shared understandings and goals also differences in background knowledge, practical experiences or frames of reference on the topic “entrepreneurship development” essentially shaped the discussions and experience exchange. There is not one ‘universal truth’ and ‘best practice’ how to promote entrepreneurship most effectively and efficiently. The challenges begin with the term ‘entrepreneurship’ and its understanding. Indeed, during the projects work, more time than initially planned was devoted to such basic issues.

Part of the project work was the organisation of two larger international conferences “Towards Entrepreneurial Regions”, to which also various external contributors presented. The results were published as conference-material and proceedings (Diensberg, Dreisler 2006) (Mets, Andrijevska 2006).

In addition to comprehensive published conference material we searched for another ‘communication tool’ which promised to be more effective for practical impulses and better value out of the gained knowledge.

The idea to summarize the conference contributions by reconstructing the basic topics and findings which were addressed was executed. A draft of this summary was presented to the Steering Group of BEPART in early November 2006, and the final version was accepted by the partners in December, who helped to translate it into different languages in spring 2007.

By means of the text “Towards entrepreneurial regions: Ten propositions for successful entrepreneurship promotion and education” the project aims to deliver central messages

- which are shared between different international actors of the project;
- which give basic orientation for improvements and point to the essential fields and political arenas for more effective regional entrepreneurship development;
- which are easier to communicate than long conference material;
- which are not compelling but leave space for further definition and implementation within regions and of the actors;
- which address three relevant groups of actors (academia, administration, business).

The conceptual idea to reformulate essential findings for entrepreneurship development into shorter proposals is not a new one. Three other examples are (a) the suggestions of Gary Rabbior for basic elements of a successful entrepreneurship education program (Rabbior 1990), (b) the ‘Ten Berlin propositions to foster the culture of entrepreneurship in German Universities’ (Existenzgründer Institut 1999), and (c) the ‘Oslo Agenda for Entrepreneurship Education in Europe’ (European Commission 2006).

The ten propositions formulated in BEPART can be regarded as a complementary approach to such suggestions, but with a new accentuation. The gist of them is a plea to embed entrepreneurship promotion and education in regions and to link it with regional development, learning and strategies.

Among BEPARTners, communication of the ‘ten propositions’ is done on two tracks:

- face-to-face at conferences, meetings or talks primarily within the regions of partners in BEPART and partly beyond, and
- online by establishing a new tool on the operations homepage www.bepart.info, where interested people can sign and comment the propositions for support and share their ideas.

2. The Text of the Ten Propositions “Towards Entrepreneurial Regions”

Imagination of Entrepreneurship

1. A broad concept of entrepreneurship is a better ground for effective entrepreneurship promotion than a narrow one.

Worldwide, one will find endless numbers of definitions and concepts of entrepreneurship. Actually entrepreneurship is a varied and broad phenomenon of applied creativity, problem-solving, innovation and interaction, beyond business start ups. It is also a concept for personal growth and learning. If we are to promote business start-ups and to develop entrepreneurship as a whole concept we shall broaden our own imagination of entrepreneurship, demystify the concept, and make it attractive to many.

Towards Entrepreneurial Regions

- 2. A region can grow in entrepreneurship if values, structures and activities for entrepreneurship are widely appreciated and supported.*

Entrepreneurship and innovation start with curiosity and the entrepreneurial spirit of people, prior to business plans, money or office space. Within local and regional environments, values and orientation towards entrepreneurship are fundamentals. Ideas need freedom for initiative, experiment and development, and possibilities to access supportive resources to put them into practice.

- 3. An entrepreneurial region calls for the integration of the entrepreneurial focus into many other policy fields beyond the promotion of high-tech innovation and start-ups.*

Regions are complex ecosystems, and entrepreneurship is a complex phenomenon. In order to facilitate entrepreneurship on a broader regional scale with sustainable effects a systems approach is required. This is considered also in European initiatives like the 'Lisbon Strategy', the 'Green Paper on Entrepreneurship in Europe' and the corresponding 'Opinion of the Committee of the Regions'. Still too many regional policy-approaches neglect the complexity by using superficial, short-term or isolated concepts. The entrepreneurship rationale demands a holistic approach.

- 4. A starting point towards entrepreneurial regions is the development of learning, education and culture for entrepreneurship.*

An education system is a mirror of dominant values of a certain region and society. If entrepreneurship shall be important for a region, education is therefore a vital starting point. The regional promotion of entrepreneurial spirit and competence within education is a grass-root approach to promote the entrepreneurial learning of individuals, social settings and organisations.

Entrepreneurship Education and Training

- 5. Entrepreneurship education shall be based on a concept for personal growth.*

Entrepreneurship is interaction and does not exist in a vacuum. As an entrepreneur one would integrate others' expectations and outside developments into one's own ideas and activities. Thus, reflection and interaction are core dimensions of entrepreneurial competence. Learning which aims at improving reflection and interaction contributes to personal growth. If we base entrepreneurship training and education on the learning goal of personal growth we enable entrepreneurship pedagogy, and can support entrepreneurial activity.

- 6. Methods in entrepreneurship education need to support initiative and creativity, the acquisition of structured experience within learning, and provide laboratory conditions.*

Entrepreneurship education and training must incorporate methods which support experiments, creativity, alertness, critical thinking, interaction and similar activity. Teaching methods should turn away from traditional lecture-style teaching. Entrepreneurial teaching and learning methods already imply entrepreneurial competence and talent which one aims to strengthen. We call this 'action learning approach'.

- 7. The development of curricula for entrepreneurship goes beyond business studies.*

Entrepreneurship addresses competences which can be utilized in all fields of work and life. Curricula should not be limited to business studies. They shall provide the opportunity to develop projects, business models or related sustainable concepts to be exposed, tested and developed on markets or under similar conditions of competition.

8. *Entrepreneurship education and promotion will be more successful if facilitators and teachers can make use of adequate training programmes (Training of Trainers).*

Opportunities to professionalize will have a positive impact on entrepreneurship training and promotion. Training of trainers (ToT) can offer such opportunity for teachers, lecturers, consultants, incubator managers and even advanced students. It should be also open for entrepreneurship promoters in politics and administration. The BEPART approach is the development of an international ToT programme based on a broad concept of entrepreneurship and on an ‘action learning approach’. Its aims are to learn from and with each other, as well as to support international exchange and dialogue in the field of entrepreneurship education and promotion.

Towards the Entrepreneurial University

9. *Universities as catalyst for entrepreneurship need to develop and embrace their own concepts of entrepreneurship.*

An entrepreneurial university aims at being competitive in its academic and service fields, and encourages entrepreneurship initiative and competence building throughout research and teaching. An entrepreneurial university creates space and conditions for the unknown, and links teaching to research. From the BEPART perspective commitment to regional entrepreneurship promotion and its regional impact belongs to the concept of entrepreneurial universities. Part of the concept are activities towards building regional innovation systems together with business and government.

Intensifying Triple Helix Interaction

10. *In order to build regional systems for entrepreneurship and innovation we need to learn new modes of triple helix interaction of university - business - government.*

Organizing regional systems and environments for dynamic entrepreneurship and innovation is a knowledge-intensive and complex challenge. The so called “triple helix” model addresses interaction between university, business and government. The model recognizes that universities and academia can and shall play an important role in regional innovation processes. It emphasizes the need for a collaborative and hybrid modus of cooperation, and concedes that control cannot be stable and synchronized beforehand but is dynamic by nature. BEPART regards this as a learning process which can only progress by cooperative work towards building such systems.

3. From the Limits of Regional Planning to a ‘Learning’ Regional Entrepreneurship Development

Regional development is not an end in itself. A merely *local* perspective turns attention to the improvement of conditions and perspectives which make life worth living for the residents. From a *countries’* or *Europe’s* point of view, regional development has to contribute to needs and goals of these larger entities: to cultural standards (e.g. economic, social and cultural well-being and peace), to research and innovation capacities, to mobility, to public services like infrastructure and education, to a legal order and other groundwork of existence and development. Lagging regions may contribute less than they are expected, may impede the development of others or may absorb valuable resources. The *global* perspective casts the light on global challenges (heteronomy, migration, poverty, epidemics, wars, ethnic conflicts, global warming etc.). These do often have their origin on lo-

cal and regional levels and other possible answers to such overall challenges lead us partly down to regional potentials of creative, inventive and entrepreneurial human beings who might be able to inspire, find and implement solutions. They will start this where they decide to live. As Danuta Hübner, European commissioner for regional policy points out: “It is in the regions and cities that we have to look for ways to turn globalisation into sustainable growth and jobs and to move upwards in terms of international competitiveness.” (Hübner 2007).

Earlier approaches of regional development have been based more or less on the paradigm of engineering. “The fundamental premise underlying most such regional policies (...) was the belief that national governments could fashion the spatial structure of the economy and in turn significantly affect the economic fortunes of lagging regions. Regional development disparities could be reduced by central government policy.” (Polèse 1999, p. 303).

But such interventionist-approaches have widely failed since they ignored the often unpredictable (also innovative = surprising) behaviour of human beings and the complexity of social life. Regions are complex ecosystems. In the words of the Nobel-Laureate Friedrich A. von Hayek we admit: „To act on the belief that we possess the knowledge and the power which enable us to shape the process of society entirely to our liking, knowledge which in fact we do not possess is likely to make us do much harm. (...) If man is not to do more harm than good in his efforts to improve the social order, he will have to learn that in this, as in all other fields where essential complexity of an organized kind prevails, he cannot acquire the full knowledge which would make mastery of the events possible. He will therefore have to use what knowledge he can achieve, not to shape the results as the craft man shapes his handiwork, but rather to cultivate a growth by providing the appropriate environment in the manner in which the gardener does this for his plants.” (Hayek 1974/1984, p. 276).

The imperative for regional development then needs to be redefined as ‘From regional planning to the cultivation of regional development’. We can demand a similar turn for such kind of entrepreneurship-promotion policies which assume that more and new entrepreneurs and start-ups can simply be ‘produced’ by just another support-programme (of funding, of training, of business plan competitions, of office-space, etc.): ‘From entrepreneurship production to the cultivation of entrepreneurship development’.

How could such a new approach of a ‘regional cultivation and empowerment policy’ work? Above all, it will certainly have to embrace a basic assumption of the following kind: “The success of a region will in the end depend on the capacity of local actors (...) to take matters in hand, to organize various parties around common goals, to adapt and to successfully adjust to outside pressures. Thus, the ultimate sources of development lie in the region itself, in its people, its institutions, its sense of community, and perhaps most important of all, in the spirit of innovation and entrepreneurship of its population.” (Polèse 1999, *ibid*). Similarly a OECD-Paper points out: “Regional success and decline seem to result from a different regional capacity to exploit the local financial, natural, physical, social and human capital to facilitate local as well as foreign direct investments.” (OECD 2003, p 2) This ‘regional capacity’ again turns back to the most relevant actors and decision makers within the regions, as they are addressed in the final proposition which highlights the ‘triple-helix interaction’ as a learning process. Presumably, the learning of successful modes of triple helix interaction (as

pointed out in proposition No. 10) is one strategic key factor for an increasing entrepreneurial regional development.

4. Experiences with and Reactions on the ‘Ten Propositions’ as a Communication Tool

The following short statements on experiences with and reactions on the ten propositions are based on:

- oral and written partner reports within the project BEPART, and
- numbers and written comments of online-cosignatories on the internet online-campaign.

The project partners in BEPART report on a broad and successful use of the 10 propositions in their own regional communication with other regional partners and actors in entrepreneurship promotion. The proposition-text thus is a well appreciated tool.

The online offer on www.bepart.info to co-sign and comment the propositions did so far attract 81 signatories (within the time June 4, 2007 until Oct. 15, 2007).

Comments given on the website cover a range from plain support (e.g. *“I agree fully...”, “I support ...”*) over qualitative shorter statements (e.g. *“... in my opinion 6,7 and 9 are crucial..”, “propositions number 7 and 9 are very close to my heart...”, “... there is a strong need for coordinated activities such as BEPART.”*) and all the way to even more proposing ideas. To the latter belong for example statements like *“I would add the need to legitimize entrepreneurship as a discipline”, „Entrepreneurial education can start in elementary school...”, “entrepreneurial education is a life-long-learning process and should (...) also recognize the importance of vocational training in vocational training institutions ...”*.

5. Conclusion

The paper started with the central question of how to make entrepreneurship promotion in regions more efficient and effective, which is a general challenge. But in view of the diversity of regions and the complexity of regional development it is unlikely that transferable ‘best practices’ can be found. Instead, it seems more promising to formulate basic principles which could support orientation and a growing success and impact of entrepreneurship promotion. This is what the ten propositions which were formulated by the international partners in the project BEPART are aiming at. The propositions do not offer a ‘final’ solution for better practices but may stimulate them, by communicating shortly central issues to start with and to care for. Additional thoughts on the character of regional development support this approach, by showing the limits of mere ‘planning’ approaches. Regional development ‘towards more entrepreneurship’ crucially depends on the capacities of the relevant actors to incorporate their own and common development and learning into the process.

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Introducing a Structured Approach to Entrepreneurship Training in Europe

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Abstract

Entrepreneurship education is already high on the agenda in most EU Member States. A wide variety of programmes and activities exist across Europe, and hundreds of seminars and short courses are given each year on or about entrepreneurship and how to start and run a business. However, there is a need of promoting and coordinating these initiatives more systematically. A better integration of programmes and activities in the established curriculum was advocated at the Oslo Conference “Entrepreneurship Education in Europe” on October 2006. (Europ. Commission, 2006) Furthermore there is room and need for a unified system to accredit and verify Entrepreneurial skills, knowledge and competence at different levels. It is quite obvious that there is a need to harmonise and improve the different viewpoints to Entrepreneurship in the enlarged EU now including 25 members.

The SofE - IDEA (School of Entrepreneurs) concept, envisages five levels of entrepreneurial competence starting from the very Basic level up to a Life-Long-Learning level. SofE concept is not about providing course material or training methodology, it is a EU-wide skills and competencies accreditation system. A clear description of Qualifications Criteria have been set up to certify the applicant meets the Entrepreneurship Competency Standards (ECS).

A comprehensive and structured list of subjects, a syllabus, and a huge collection of questions and model answers will be the main tools used within the structured accreditation process. Against a complete signed and approved “Logbook”, the “Business Practice Certificate” will be the award given to persons who successfully fulfil the award requirements set by the SofE - IDEA Governing Board.

1. Introduction

The need for more Entrepreneurial Spirit in Europe, which is facing increasing competition from the USA and Asia, has long been recognized. Entrepreneurship is a key driver of the economy. Thus wealth and a high majority of jobs are created by small businesses started by entrepreneurially minded individuals, many of whom go on to create big businesses. Starting a new business or growing an existing one, is a demanding and tough job. The real secret to success is eagerness to learn and having access to knowledge, experience and expertise of others.

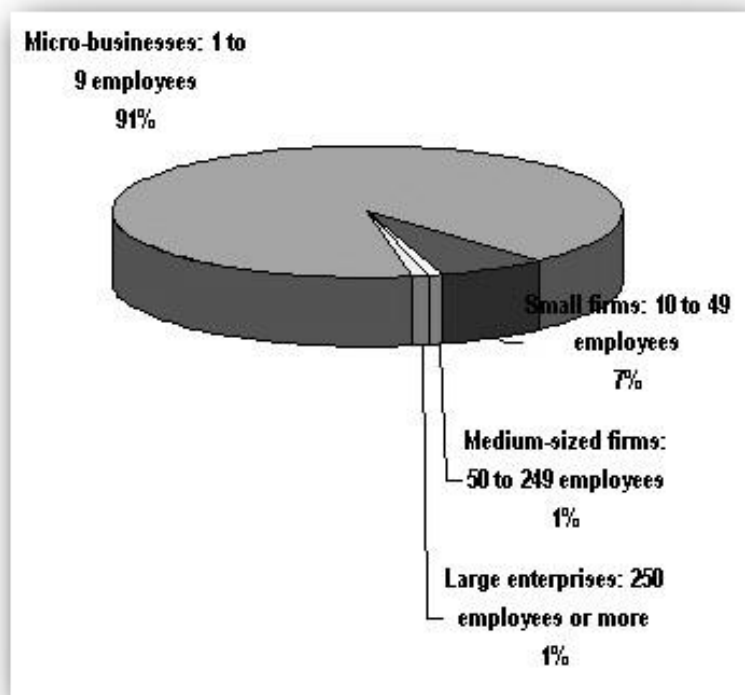
Entrepreneurial abilities, in part innate, are always accompanied by a store of specific knowledge (of market-place, administrative, managerial and communication) which requires/demands training and updating in the course of time.

In the light of growing challenges imposed by ever more competitive and globalised markets, where knowledge and professionalism represent a resource of very great value and constitutes the key to success, the SofE - IDEA System supplies a framework for training and certification of aspiring and existing entrepreneurs in order to stimulate their competitiveness and continual improvement.

2. Filling in the Gap

While statistics give a very clear picture of the demographics of businesses (see graph below), the educational systems does not prepare its output to fit into this economy.

Figure 1: Business shares according to enterprise sizes



Source: own illustration.

There are around 23 million small and medium-sized enterprises (SMEs) in the European Union. In practice, 99% of the businesses in the European Union are SMEs, and they provide two-thirds of all private sector jobs (about 75 million jobs). Nine out of ten enterprises in the EU's non-financial business economy are micro-businesses (with fewer than 10 employees). These micro-enterprises account for about 30 % of all jobs and one fifth of the created value-added.

Entrepreneurship education is a lifelong learning process, starting as early as elementary school and progressing through all levels of education, including adult education.

On one hand, university degrees prepare people to fit into large firms as competent managers. On the other hand, there are hundreds of seminars and short courses given in all EU countries each year on or about entrepreneurship and how to start and run a business. Such small business management and operations-related courses often teach how to oversee the day-to-day functions of a small business once it is established. These courses might focus on managing finances or employees, for example, or might also deal with practical information, such as taxation or license management. But the timing and content of these courses is not following a plan which connects them with each other. Furthermore there is no unified system to value and verify this knowledge acquisition process.

So, there is a need for a more structured approach for effective training of entrepreneurs. (LdV seminar "Development of Entrepreneurship", Hague 2003). Entrepreneurial education and training has to focus on the SME's importance and demographics and must adapt to their special needs. There is a vast list of daily tasks that have to be performed in any business. These various tasks are allocated to the available persons and are executed to various degrees of completion and quality, depending on the available resources (including time). In a large firm, there are many employees per function, while in a small firm, there are many functions per employee. Small business managers are responsible for managing all aspects of a business, from inventory control to marketing and staffing. As these managers are involved in all facets of a business, they have the opportunity to develop and implement innovative ideas. Moreover, entrepreneurial education and training has to adapt to the new global economy, where competitiveness and continuous development is a survival factor.

3. The SofE - IDEA Model

3.1. The Leonardo da Vinci Project

A consortium of nine partners (Cyprus, Czech Republic, Germany, Greece, Italy, Norway, Romania, Malta and the UK) under the co-funding of the EU (DG Education & Training) in the framework of the Leonardo da Vinci EU Programme, developed an integrated and structured system of entrepreneurial development. The name of the funded project is SofE - IDEA (School of Entrepreneurs – Integrated Development of Entrepreneurial Achievers).

The specific aims of the project are:

- (a) To develop and evaluate the idea of an integrated system of entrepreneurial training and development whereby any person, wishing to engage, or already engaging in business will acquire knowledge and skills of a certified level of competence in a well-structured and well-documented methodology, regardless to the acquisition manner (through formal, non-formal and informal learning, either by conventional training, self-study, e-learning etc.),
- (b) To introduce an effective and integrated, Europe-wide mechanism of valuing this knowledge and creating a driver to encourage the refreshing, reactivation and enlarging of such knowledge and ability.

3.2. The Concept

The system proposed by SofE - IDEA consists of three instruction levels starting from a basic level with the main purpose to create awareness. The “basic” level is open for all even for those who only finished junior school but have the willingness and aptitude to start and run their own business. The second (“advanced”) level is where theory meets with practice and it is the most appropriate level for people recognizing the need to learn how to play the many roles demanded in a modern micro or small enterprise. The third level is called the “Life-Long-Learning Level” and is designed for individuals seeking specific knowledge to help acquire specific skills which will allow them to practice something better or to be able to converse productively with their specialist consultants and advisors.

It is important to emphasize that training according to the syllabus requirements is provided independently of the SofE - IDEA Organisation, through every form of course (formal, informal, self-learning, e-learning, etc.).

The SofE - IDEA is designed for various types of candidates:

1. Aspiring entrepreneurs who want to start their own business and pursue their dreams.
2. Professionals who want to leave the role of an employee and start their own business.
3. Successful professionals in one arena who want to diversify by owning their own business.
4. Small business owners who need specific courses on entrepreneurship, in order to stay competitive and to take advantage of the emerging market opportunities.
5. Existing entrepreneurs who want to improve themselves; identify and fill gaps; update their knowledge and skills.
6. Managers who, apart from their duties, are having the role of consulting and mentoring.
7. Scientists and researchers who face the challenge of business, commerce, and entrepreneurship in order to develop and protect their inventions and discoveries.
8. Students who have studied non-business curricula, and now start their own business or enter the market as self-employed (e.g. engineers, doctors, technicians, gymnasts, etc).

Within the SofE - IDEA System knowledge and skills are acquired in a structured and consistent manner, while their acquisition is objectively examined and certified against well set standards. The IDEA model aims at creating a process whereby entrepreneurial education at any level will lead to an assessment and a certificate given by a recognized body in each country (chamber, association, authority, etc.). Such certificate could be valid for a certain period, after which the skills and knowledge must be re-evaluated and re-certified. In that way, the qualification will always reflect the owner's effective competences on the current business environment and the process will encourage life-long learning.

3.3. The Tools

In order to assist examiners, trainers and candidates to achieve qualified and certifiable results, the SofE - IDEA model has envisaged and developed a number of tools:

- the syllabus
- the logbook
- a set of question and model answers.

The Syllabus

The Syllabus and its supporting performance indicators are the framework for training providers to use in building appropriate objectives, learning activities, and assessments for their target audience. With the help of an experts' network in each country the syllabus and subjects will be kept current and relevant.

The Logbook

The aim of the SofE - IDEA Logbook is to help candidates, course providers, evaluators and the SofE - IDEA organisation to get the best results out of the certification process.

A logbook in which the examination result will be entered each time an examination is successfully executed, will be given to every participant. Each logbook has an unique Code Number and in combination with each candidate's unique code number an unique identification key is provided. Thus the consistency of the logbook and the candidate's status can be easily checked by the SofE - IDEA Organisation.

The logbook will be made available in all languages of the consortium.

Questions & Model Answers

The questions and model answers will provide guidance to examiners, trainers and candidates as to the desired level of competence a person should attain.

The selected format for the Q&MA is the multiple-choice item. The main reason for using such model is that in general, it takes much longer to respond to an essay test question than it does to respond to a multiple-choice test item, since the composing and recording of an essay answer is such a slow process. A candidate is therefore able to answer many multiple-choice items in the time it would take to answer a single essay question. This feature enables the examiner to test a broader sample of course content in a given amount of testing time. Consequently, the test scores will likely be more representative of the candidates' overall skills and competences (Burton, 1991).

3.4. The EEP Certificate

For acquiring the EEP certificate (at any level), candidates must prove their knowledge and skills. In order to be awarded the EEP certificate, candidates must then fulfil the SofE - IDEA requirements and have successfully passed the written exams, organised and supervised by the SofE - IDEA Organization.

The goal of the EEP Certificate is to provide evidence of an acquired knowledge base which is necessary for successful entrepreneurship and of competences to cope with today's global and competitive market. The added value of someone having the EEP Certificate, apart from knowledge and skills acquired in the process, will be an evidence for:

- credibility to bankers for funding;
- reliability to agencies, state and EU for subsidies;
- solidity and trust to potential partners.

4. Conclusion

The mission of the SofE - IDEA concept is to promote excellence, opportunity, and leadership among entrepreneurs, focusing on but not limited to SMEs and the self-employed.

The SofE - IDEA System is more than just another training programme. It is a programme for certifying acquired entrepreneurial knowledge and skills, based on well established standards.

The SofE - IDEA consortium has indeed developed a programme of structured instruction for practicing or building entrepreneurs. This will lead to a recognized qualification (EEPC, European Enterprise Passport Certificate) outside the formal educational system.

5. Acknowledgement

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Competency Testing Methods for Education and Training of Entrepreneurs outside Formal Education

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Abstract

The European Commission's "Green Paper" on Entrepreneurship in Europe (2003) points out that entrepreneurship is a mindset and that we should use this mindset "to promote and nurture an Enterprising Culture in Europe." These two approaches to the enterprise idea, constitute the framework of the SofE - Idea project.

In a large firm, there are many persons per function – while in a small firm there are many functions per person. Starting and running micro and small sized companies like these, requires "carrying out tasks competence" (doing the right things - and doing the things in the right way), furthermore "personal attributes" (attitudes, abilities, knowledge and skills) and finally "holistic knowledge" that includes both education and training on different levels - and with a complementary focus. Acquiring that, will enable people to build up a stronger enterprising mindset and attitude. People will be motivated to think in new terms and focus on their creative and innovative abilities. Altogether this will give people a skilled power to steer and manage their micro or small enterprises through foreseen and unforeseen challenges on their path to a successfully fulfilment of their personal and company aims.

Training, supporting and nurturing, "entrepreneurial talents" will bring the European economy vital steps forward and lead us as close as possible to the commission's visionary targets.

Achieving that, we need to develop enterprise education and training programmes that fit the common needs of the European communities. The aim of the SofE-Idea project is to establish a pan-European entrepreneurial skills and competencies accreditation system, that utilizes the existing training infrastructure and provides a structured, integrated approach to entrepreneurial knowledge acquisition. An important part of the SofE-Idea project is to develop competency-testing methods for organising a consistent system of examining entrepreneurs.

The scope of this work has been:

To seek for, identify and analyse information on current methods of testing the competency of entrepreneurs outside formal educational establishments (i.e. outside schools, colleges and universities). Furthermore we have evaluated competency testing methods and external examination systems used in entrepreneurial training as well as any accreditation schemes for such testing, to consider whether they are useful for the SofE-Model or not.

1. Introduction

Enterprise development, innovation and entrepreneurship have lately been serious topics at the political agenda in Europe, as a result of the Lisbon meeting in 2000. The politicians found that the capacity to adapt to economic changes was crucial for future competitiveness. In Lisbon we got a major strategic discussion where the members of the European Council defined its objectives concerning employment, economic reforms and social cohesion. The dynamics of entrepreneurship was seriously put on the agenda for the first time as a strategic subject. Europe has recognized that a future focus on Entrepreneurship would contribute to job creation and growth. Research showed that Entrepreneurship is crucial to competitiveness and a more offensive enterprise education and training will boost future productivity. The entrepreneurial consciousness though, has usually been related to adult people, with broad experience and professional skills within certain branches or work areas. An occupation as an entrepreneur is not just a way to earn money anymore. Important is also the level of independence, freedom, and challenge in the work situation, variety of tasks and opportunities for self-realisation.

My dear friend Eugene Luczkiw, Professor at Brock University, Ontario Canada and the Director of Institute of Enterprise Education at the same University, used to open his speeches with a macro consideration. He said:

“A number of critical global demographic, economic, scientific, technological and social forces are transforming existing national landscapes with ever greater intensity and speed. When these forces are viewed as interconnected wholes, we get a picture of the world that is rapidly becoming compressed by time and distance. In the process, a number of severe shocks to the environment could have a profound impact on the nature of the technologies that will become the drivers, impacting on the economic and social landscape. It is within this environment that Europe finds itself today.”

The report entitled ‘An Agenda for a Growing Europe’, prepared for the European Commission (2003) concludes that a massive change in Europe’s economic institutions and public sector organizations is a necessity, in order to adapt to these highly chaotic and disruptive events.

The central thesis of this report is that a lesser number of big vertically integrated firms are required today. The alternative micro, small- and medium-sized firms (MiSME’s) are operating by different sets of rules. These firms seek more retraining, greater flexibility of labour markets, increased availability of external equity finance, and increases in investment in R&D and education. The transformative nature of this change, requires an entrepreneurial mindset to pervade every corner of existing institutions and organisations. Today’s entrepreneur generation needs to be prepared for these changing patterns.

Future enterprise leaders need to seek to become effective participants in today’s emerging global arena. To be enabled to do that, they will be required to lead major transformative efforts which will transcend the existing conditions and cultures of both private and public sector institutions, on a national and transnational basis in Europe.

The Green Paper on Entrepreneurship in Europe (2003) points out that entrepreneurship is a mindset. As a society, we have not come to terms with the real meaning behind this disclosure. What the authors of the Green Paper point out, is that we must begin to unlearn most of what we learned in the past and relearn a whole new set of mental models to deal with the challenges of today’s knowledge

network age. This 'new age' has an inherent new set of rules that we need to internalize. The entrepreneurial mental model is the necessary first step in a journey into the uncertain and unknown future that we face.

The principles and practices of entrepreneurship, present a model for effectively interacting with this chaotic, complex and highly disruptive environment. Today's and future entrepreneurs, on the other hand, need to transcend existing 'lock-in' patterns of organisation that are no longer able to provide the needed energy and solutions to the challenges we face within this disruptive environment. These principles and practices of transformation already exist. What is needed now is the will and motivation to understand and see them and the courage to take action.

The SofE-Idea model is supposed to be a forceful tool for future entrepreneurs, to enable them to be strategic in their thinking, planning, behaviour and action.

My mission in the project has been:

1. analysing the content of enterprise and entrepreneurship competence,
2. analysing the entrepreneur - as a dynamic person,
3. studying the existing competency testing methods, valuating them and finding a model that has been developed for the target group of enterprising people who need education and training outside formal education institutions,
4. alternatively - composing a (some) reasonable model(s) that can be used to make the test a positive learning experience for the participants - and based on that propose the best model.

2. Tracking the Fields of Competency Testing

Before we started mapping the competency testing methods, we asked ourselves the following questions:

1. Why is entrepreneurship that important?
2. When did the concept emerge?
3. What is entrepreneurship?
4. Who are entrepreneurs?
5. How can we teach and train entrepreneurs in a consistent and reliable way?
6. How should future enterprise talents be tested and certified as Entrepreneurs within EEP (European Enterprise Passport) in an impartial and valid way?

Why is entrepreneurship that important?

In the changing society, where work and mode of living are changing and new requirements have been added over a short period of time, it is important to develop entrepreneurial and innovative people.

In a changing society where hundreds of thousands of jobs have been swept away, we are facing unemployment among young people throughout Europe who have prepared themselves for the labour market. A whole generation of young adults are in danger of being excluded from the future labour market it is about that time we inspire and motivate them to create their own workplace and be self-employed.

In a changing society more precisely - in rural Europe where we are facing a severe depopulation of young people, especially young women, who in a large scale are migrating to the urban areas, to get education or to compete at the open labour market. Too few of them return to their homes. In a changing society where the regions of Europe need to increase the attractiveness of investments in business and industry development and focus on developing micro and small enterprises as a vital supplement to "industrial giants."

What is entrepreneurship?

There are numerous definitions of Entrepreneurship. For me, the three following definitions are complementary. Peter Drucker, says that entrepreneurship is – “the practical part of innovation based on peoples initiating/effectuating abilities and behaviour”.

The previous mentioned Eugene Luczkiw states that Entrepreneurship is “first and foremost a mindset and then a practice of disruptive innovation. Entrepreneurship, as a discipline, cannot be taught, but can only be facilitated as part of a holistic strategy.

The Norwegian Government states in their strategic plan for Entrepreneurship in education and training that; “Entrepreneurship is a dynamic and social strategy and process, where individuals, alone or in co-operation with others, identify opportunities and transform ideas into practical and target oriented activities. Either within cultural or economical contexts.

As we can read above, Entrepreneurship is a special dynamic and holistic human competence. People who own enterprising qualities and knowledge, experience and skills, will be able to make a difference in their community/society within the branches they put their entrepreneurial commitment into.

Two types of Entrepreneurship

In Norwegian education an divided educational approach to entrepreneurship is occurring, where two levels can be distinguished.

The Pedagogical Entrepreneurship (the interior level) – is about how we think, our attitude and how we act. These factors are distinguished by a will to act, curiosity, creativity, innovative attitudes and abilities, courage, risk-taking abilities within a social, cultural and economic context.

Community and Economic Entrepreneurship (the exterior level) – is about skills and ability to act, to create activity around new ideas that could lead to development of new products, new services and more permanent business activities. Entrepreneurship is the practice of innovation.

This differentiation has made it easier to implement entrepreneurship into schools. The teachers in public education has approved and “embraced” the implementation of Entrepreneurship as a strategy of education and training. There are examples of considerable cooperation between business schools, teacher schools and business and industry organizations in Norway where all try to develop future complementary training concepts together.

Enterprise Competence

After having studied 2700 SME over a 10 years period Luczkiw has discovered the following critical patterns that can define the actions of an entrepreneur.

1. Every entrepreneurial journey has its own distinct set of dynamics. There is not only one-way to reach the start-up goal. Every venture has its own set of challenges, crises, risks significant events and opportunities. The start-up stage is usually the most critical. The entrepreneurs are often alone and avoided like a plague by individuals representing the mainstream of society.
2. Entrepreneurs are “Agents of Disruption” – how can a business succeed in the midst of all critical factors that occur from the moment the entrepreneur got the idea to the successful marketability of the products. They have a unique driving force and energy to succeed.
3. The Entrepreneurs have an innate ability to take what is ordinary and make it extraordinary – they have a “Power of Engagement”. They energize and inspire themselves and others around their vision of achievement.
4. Entrepreneurs are powerful “networkers” and they are particularly good at attracting the right people around them. They usually create the right conditions to focus their collective energy towards the achievements of their collective vision. They are “connectors” (ref. “The Tipping Point” – Malcolm Gladwell). Typical entrepreneurs are often responsible for spreading fads, establishing trends as well as launching initiatives.

Who are the entrepreneurs?

As agents of change, most successful entrepreneurs demonstrate common characteristics that include:

- Enterprise competency is a person's inner building – his whole portfolio of qualities, knowledge, know-how and skills (holistic competency);
- His/her qualities consist of personal attitudes, behaviour (in learning, co-operation etc.);
- His/her ability to bounce back, to be determined, have will and courage to take new initiatives;
- It is a person's ability to be innovative and creative, flexible, adaptable;
- It is the individual's ability to take risks with an opportunity focus;
- It is a person's self-confidence, integrity & humility;
- People's social skills & teambuilding abilities, strategic mind, visionary and inspiring acts;
- It is a person's commitment, his or her strong needs to achieve.

Entrepreneurs have often (consciously and unconsciously) found a way to connect their distinct contribution, creativity and commitment with their mission in life.

Their mission is the driver that seeks to connect with emergent opportunities in today's highly chaotic and disruptive external environment. The entrepreneurial mind thrives in environments of uncertainty, diversity of culture, talent and opportunity.

They often are known as self-confident all rounder, the person who has the idea, designs the product, produces it, does the marketing and counts the money afterwards.

They have usually the ability to bounce back, to be a person who can cope with making mistakes and still has the confidence to try again.

They have innovative skills – not always an “inventor” in the traditional sense, but one who is able to carve out new niches in the market, often invisible to others.

They often have problem solving abilities based on a positive attitude where problems are looked upon as an opportunity and are result-oriented, making the business successful requires a drive that only comes from setting goals and targets and getting pleasure from achieving them

Their total commitment – hard work, energy and single-mindedness are essential elements in an entrepreneur's profile.

These are the future individuals at our School of Entrepreneurs SofE and these are the people we have developed curricula for. They will require a consistent, reliable, impartial and valid test methodology to make the certification process successful.

3. Analysing the Test “Market”

We have been searching for current approved methods for testing the competency of entrepreneurs outside formal educational establishments (i.e. outside schools, colleges and universities) in 18 countries in Europe, as well as the EU Commission, through DG Education and Culture, DG Enterprise and the OECD LEED Program (Local Economic and Employment Development). We asked for information about competency testing methods and external examination systems used in entrepreneurial training as well as any accreditation schemes for such testing.

We particularly asked for information about:

- identification and evaluation of competency testing methods (short description of form, administration and if you can ... consider what a competence testing systems of entrepreneurs will cost)?
- external examination systems used in entrepreneurial training?
- accreditation schemes for such testing?

The feedback has been very sparse. In general we can say that age graded the basic structure in the education system of entrepreneurs. The learning, the curricula and the learning/training materials do not keep up with training requirements for future entrepreneurs in our target group.

We have hardly found any training concepts that include competency-testing models within the field of Entrepreneurship training outside formal education. We have been making quite an extensive research via Internet. Our Internet search included different education, learning and training systems, research articles and competency testing organizations. The most interesting test though were:

The National Occupational Competency Testing Institute (NOCTI) is a leading provider of high-quality occupational competency assessment products and services to secondary and post-secondary educational institutions in the United States and around the world. They did not have any test programmes or certification adapted to entrepreneurs in training.

NOCA - National Organization for Competency Assurance (NOCA) – a world leader in setting quality standards for credentialing organizations - develops standards and accredits organizations that meet them, evaluates methods for assuring competency, disseminates findings of competency assurance research, helps employers make informed hiring decisions, establishes standards, recommends policies, and defines roles for certifying organizations and assists consumers to make informed decisions about qualified providers. NOCA did not have any test programmes or certification adapted to entrepreneurs in training.

But what these organizations had was standardized and customised certification concepts for various types of occupational activities, unfortunately not within the subject of enterprise.

It is obvious, however, that the assessments and competence assurance concepts they use, can be used as a model and partly benchmarked into the concept of enterprise/entrepreneurship learning and training.

4. A Future SofE - IDEA Test Regime Model

Based on this research, we have concluded that we need to develop a competency testing regime ourselves, that includes:

- mapping of creativity, personal abilities, willingness,
- ability to take risks,
- ability to handle changes,
- treatment of information and
- ability to plan and adjust plans, strategies and aims.

Furthermore we have been preoccupied to find testing regimes that could test the ability to work in teams, to be in a working group with others, the quality of personal performance and how to keep up the economic drive (handle accounts, budgets, economical/financial planning, marketing/selling strategies etc.).

When choosing test forms in relation to a special thematic area, we should have very clearly defined professional aims on how the learning and training process should be accomplished and clear definitions of what kind of skills the candidate should have after the training process. By doing that, we could use previous known test concepts, benchmark it (use it as a norm) and design our own test concept linked to the SOFE Idea/ European Entrepreneurship Passport (EEP).

The model should build on what kind of learning and training competence categories are **important for entrepreneurs. The ability to:**

1. make a general overview & analysis,
2. recognize and interpret “social & cultural pictures, patterns, trends & frames”,
3. show cultural understanding/insight and communication between company cultures (internal and external),
4. Develop concepts – combining different approaches to a problem/challenge,
5. think critically – learn to ask questions, think otherwise, look for alternatives,
6. be independent – risk to face challenges you haven’t met before, search for new knowledge and adapt/change according to your new knowledge.

When making the final evaluations for people participating in the EEP test we should assess the following methods:

1. Portfolio material – work based documentation, texts (description of a business idea, a business plan, a product etc)
2. Electronic tests (for portfolio) – “hands on computer”, an interactive step – by – step, multiple choice tests (questions) based on a Curriculum (monitored by the test-centres)
3. Synopsis & pitch – on regular basis. Short written “bullet point” description (PPT) – combined with a verbal presentation (could be a presentation of a problem solving issue, or a short presentation of a business plan)

4. Team group tests – focus on the ability to share knowledge, co-operate to find solutions, create synergies
5. Project work/PBL training – to master the art of project work and management and master the process and the “rhythm” of Project work (target oriented, time limited, resource limited, personnel limited and problem based/PBL) Practical training/urging tacit knowledge – learn to pursue the knowledge of
7. experience, rarely written down and shared with others - writing logbooks/short “work describing” essays, (Tacit knowledge is also described as “know-how”). Tacit knowledge often gives the little extra in innovation - “boosting” innovation processes
8. Trainee Enterprise simulation programs – entrepreneurs have practical training how to
10. set up a company, by setting up a virtual company, facilitated by teachers/ coaches/
11. mentors.

5. Certification of Entrepreneurs?

In the future EEP, we will recommend the following test programme regime as a pilot to test centres throughout Europe. The test regime should be used and evaluated over a period of one year (12 month) and then taken up to consideration and adapted according to the experiences:

1. Synopsis & pitch – on regular basis. Short written “bullet point” description (PPT) – combined with a verbal presentation (Performer – training to handle presentation of a problem solving issue, or a short presentation of a business plan, a selling/marketing approach to customers etc.).
2. Frequent electronic tests (individual for portfolio - to document education/skills) - interactive step-by-step, multiple-choice tests (questions) based on a Curriculum (monitored by the test-centres).

In combination with:

3. Simulation of a start-up process (train teamwork in processes, use logbook, coaching/ supervision, evaluation).
4. A final electronic test (individual for portfolio) interactive step-by-step, multiple-choice tests (questions) based on a Curriculum (monitored by the test-centres).
5. Annual electronic supplementary tests (individual for portfolio)
6. interactive step-by-step, multiple-choice tests (questions) based on a curriculum (monitored by the test-centres).

6. Conclusions

Today Europe needs a specific programme that is combining individual, team and net-based process oriented education and training for entrepreneurs.

SofE IDEA has developed a training programme based on the above-mentioned concept and is developing a European Enterprise Passport (EEP), a certification model for future entrepreneurs.

The competency testing methods for the SOFE IDEA training model is recommended to include:

- Synopsis and pitching(performance – both visual & verbal)
- Interactive Electronic Tests (regularly, basic, advanced and annual supplementary tests for a career portfolio);
- Practical simulation (team based/co-operative training) of a Start - Up Process (based on a case) and
- business exhibition and competition.

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NOCTI - The National Occupational Competency Testing Institute.

NOCA - National Organization for Competency Assurance.

The Costs of Ignoring Entrepreneurship Education

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1. Introduction

Entrepreneurship and SMEs have emerged as the engine of economic and social development throughout the world. The role of entrepreneurship has changed dramatically and fundamentally, so that it is now seen as a requisite ingredient generating employment, economic growth and international competitiveness in the global economy.

The current economic environment is characterised by global competition, fast technology developments, shorter product life cycles, more demanding consumers and changing enterprise structures through mergers, alliances and take-overs. In this competitive and complex environment, human capital is increasingly recognised as a key engine for economic growth. Thus, the new growth theories make economic growth dependent on the rate of accumulation of both physical and human capital, defined by the levels of knowledge, skills and competencies of the workforce. Some authors suggest that the Western developed countries have experienced in the past few decades a transformation in which knowledge has become one of the most important inputs underpinning economic development and competitive advantage. The skills currently required are often related to fields that are not only of a technical nature, but also of an organisational and social character that may allow staff to operate in more fluid and interactive organisational contexts.

For innovation in the 21st century the significance of entrepreneurship has major economic and social considerations. By producing and supporting knowledge-based ventures with high growth potential, Europe enhances its ability to create jobs and economic wealth. As well as bringing positive benefits to individuals and communities, it means that it can continue to compete on the world scale by producing first-class companies.

Small businesses contribute much more to the economy and society as a whole, than can be calculated just from the spending and profit that they generate. These businesses tend to be more economically innovative than larger companies, better able to respond to changing consumer demand, and more receptive to creating opportunities for women and minorities, and activities in distressed areas. Building, running, and growing small business is a part of a virtuous cycle of creativity and increasing prosperity that can be applied by dedicated and thoughtful people anywhere. There are no secrets, and frequently money is less important than a considered combination of imagination and effort.

Small and large businesses are not distinct segments of the European Economy: They buy each other's products and build on each other's innovations to generate economic growth. The smaller businesses

are frequently younger ones created by self-employed entrepreneurs. Such activity contributes further to economic growth by challenging traditional technologies and practices. In turn, economic growth promotes entrepreneurial activity by providing markets and financing for men and women bold enough to venture alone into the stormy seas of a consistently expanding economy.

2. Why is Entrepreneurship an Issue?

Entrepreneurship is the act of creating value by seizing opportunity through risk taking and mobilisation of human, social, financial and physical capital. Entrepreneurship has been important for the economic development, national and individual wealth creation, productivity and new job formations, wherever individuals have had opportunity to take economic initiative. Entrepreneurship and growth of the SME sector has been seen as a potential factor to stimulate economic growth and reduction of unemployment.

Different concepts and approaches have been applied to test the forces and elements that are crucial to entrepreneurial driven economic prosperity. Current theories of entrepreneurship tend to focus on the entrepreneurial activity as an interaction of personal and contextual elements.

The significance of the context is clearly underlined by the research showing that entrepreneurship seems to prosper in societies where most members view it with a favourable attitude, and where cultural factors encourage entrepreneurship.

An entrepreneur is an individual with a perpetual desire for achievement (Ying Lowvey, USSBA).

The entrepreneur has long been recognized as the apex of the hierarchy and determines the behaviour of the firm and thereby bears a heavy responsibility for the vitality of the free enterprise society. (Baumol).

Governments must not underestimate the importance of directing the entrepreneurial vision because the entrepreneurial energy as human resource can be utilized to reach the best interest of society as a whole. It is therefore important to create and maintain an environment conducive to entrepreneurship. Government policy can have a substantial effect on the quality of entrepreneurial contribution present in an economy (Baumol). A system that does not recognize and nurture hidden entrepreneurial energy but rather places severe roadblocks in the way of entrepreneurial action will contain entrepreneurs who primarily engage in unproductive or even destructive endeavours.

Enterprises are at the heart of the strategy launched by the European Council in Lisbon in March 2000. Reaching the objective of becoming more competitive and dynamic in the knowledge based economy, capable of sustainable growth, more and better jobs, and greater social cohesion will ultimately depend on how successful enterprises, and especially SMEs are.

As economies prosper more from how they apply knowledge rather than materials, there is an ever-greater premium on innovation, flexibility, large-scale customisation, and specialisation – whether in serving sandwiches or programming software.

Building, running, and growing small business is part of a virtuous cycle of creativity and increasing prosperity that can be applied by dedicated and thoughtful people anywhere. There are no secrets, and frequently money is less important than a considered combination of imagination and effort.

The European Community places increasing emphasis on the development of innovation and entrepreneurship. In most developed countries entrepreneurship education has been introduced in schools and universities as a means of increasing the employability of young persons and improving their ability to function independently, even as self-employed persons.

"Every citizen must be equipped with the skills needed to live and work in this new knowledge society" and "a European framework should define the new basic skills¹ to be provided through lifelong learning: IT skills, foreign languages, technological culture, entrepreneurship and social skills"(SOURCE). Furthermore validation of basic skills should be promoted to support further learning and employability.

But why are some firms more productive than others? To answer this, one must explore how they become aware of new technologies, and why they decide to adopt them.

Firms differ in:

- The capability of their management;
- How they are organized;
- Their use of technology;
- How much capital they can raise.

Firms increase labour productivity by adding to the ratio of capital per worker but skill shortages may reduce investment in new technologies by SMEs.

Working in the SME space requires flexibility and wide-ranging skills, but it also helps to recognize other opportunities besides financial gain. The ability to recognize those opportunities is essential.

"Companies are always looking to get the most out of the dollars they're spending in labour," "The more roles you can satisfy in the company, the more apt you are to get the job, or keep the job, or get the promotion. Companies can't always afford to keep a high-level specialist. Companies are hiring people to do multiple tasks."

3. The Demographics of Enterprise

One fact is striking and needs to be emphasized - not only are most enterprises in Europe small, but they also account for a significant amount of European work experience and economic activity. For example, in 2003 there were more than 19 million enterprises in Europe, providing a job for almost 150 million people. By contrast, there are only about 40,000 large enterprises in existence, which account for only 0.2% of all enterprises. So, the vast majority of enterprises in Europe (99.8%) are SMEs. Within the group of SMEs, the vast majority (over 90%) are micro enterprises, employing fewer than ten persons. Approximately half of these micro enterprises have no employees at all, thus only providing employment and income to self employed and family workers; this amounts to roughly 9 million enterprises. On average, a European enterprise provides a job for seven persons; this measure of enterprise size varies between three in micro enterprises and over 1,000 in LSEs. So, the typical European firm is a micro firm.

¹ 'Basic skills' is generally taken to refer to literacy and numeracy; the Lisbon Council called for adding the new skills needed in a knowledge society such as ICT and entrepreneurship.

On average, an enterprise in Europe - even including all very large enterprises - provides employment to six people; the average for SMEs only is four people. However, this varies between two people in micro enterprises, and over 1,000 in large enterprises. Between the countries, there are large differences as well. On average, an enterprise has two occupied persons in Greece and three in Italy, compared with ten in Ireland, Luxembourg, Austria and the Netherlands.

4. Definition of SME's

In terms of definition, there is no single, uniformly acceptable one for small firms (Storey, 1994). Firms differ in their levels of capitalization, sales and employment. Hence, definitions that employ measures of size (number of employees, turnover, profitability, net worth etc) when applied to one sector could lead to all firms being described as small, while the same definition when applied to a different sector would lead to different results (Quartey, 2001).

We need a better, more practical, definition of the SME for use in our organizational planning and the design of deliverables and products for such Enterprises.

The Proplan Ltd. definition is «SMEs are organisations in which there are many functions per person as opposed to many persons per function (Large Organisations)».

By “UNIDO’s definition for Industrialised countries, 500 workers and more applies to large firms, 100-499 workers represent medium firms and small firms are those with less than or equal to 99 workers”.

According to the Commission of the European Communities (EC, 1996) the SME’s definition medium-sized enterprises have 50-249 employees, a revenue of less or equal to 40 million Euro, a total capital employed of less or equal to 27 million Euro. Small Enterprises have 10-49 workers, less or equal to 7 million Euro in revenue and the total capital employed is less than 5 million Euro.

The USSBA definition applies to SME’s that are non-subsiary, independent firms which employ fewer than a given number of employees. This number varies across countries. The most frequent upper limit designating an SME is 250 employees, as in the European Union. However some countries set the limit at 200 employees, while the United States considers SME’s to include firms with fewer than 500 employees. Small firms are generally those with fewer than 50 employees, while micro-enterprises have at most ten, or in some cases five workers. Financial assets are also used to define SME’s. In the European Union, SME’s must have an annual turn-over not exceeding EUR 40 million and/or a balance sheet valuation not exceeding EUR 27 million.

It is indeed a paradox that while statistics of the European business world give a very clear picture of the demographics of SMEs (see Table 1), the educational system does not prepare its output to fit into this economy.

Yet the business courses offered by the formal educational systems seem to ignore this reality and produce employees for the large enterprises and multinationals. One only has to glance at the textbooks used to understand that by far the largest proportion of educational and instructional material used totally ignores the fact that 91% of all enterprises cannot have any meaningful hierarchy in the traditional sense of the word.

The questions therefore are:

- (1) “Are we training and preparing the next generation to fit into the economy?”
- (2) “Does anybody have a practical, working definition of the SME?”
- (3) “What are the differences between large and small firms?”.

Table 1: Enterprise proportion according to company size

Description	Size	Proportion
Micro-businesses	1–9	91%
Small firms	10–49	7%
Medium sized firms	50–249	1%
Large enterprises	>250	1%

Source: author’s illustration.

Large enterprises lost jobs between 1988 and 2001, while employment in the SME-sector increased. In the early years this growth was concentrated in micro and small enterprises, as significant employment growth in medium-sized and large enterprises only started in 1997. Some facts are:

- 93% of all European enterprises have less than 10 employees;
- The average European enterprise employs 6 people;
- Most jobs in Europe are created by micro enterprises;
- The average new entrepreneur is 35 years old.

5. How are Entrepreneurs Trained Today?

We will not attempt to answer all these questions and the accompanying issues that ensue. However we will give our version of the difference between large and small firms.

In a large firm there are many persons per function while in a small firm there are many functions per person. This is easy enough to understand when one attempts to make an exhaustive list of the daily tasks that have to be performed in any business. One soon realizes that this list is not infinite and that the various tasks are allocated to the available persons and are executed to various degrees of completion and quality depending on the available resources (including time).

The corollary that follows from this is that the personnel training needs of the small and micro enterprise need to be examined from the perspective that the same person may be assigned more than one role and that each role must be “played” well. Competition and the law do not make relaxations and allowances for size. It is therefore imperative that persons being prepared to fit into the real economy must strike a balance between specialisation and multi-skilling. Unfortunately multi-skilling is being ignored in favour of specialisation in our current educational system. This has been long recognized.

In short we believe, and we see from our experience so far, that we are producing graduates who are to a large extent unemployable or graduates who require extensive conditioning in order to adapt and become productive in a world of micro-enterprises.

Enterprise creation processes and chances of survival after the start-up phase strongly depend on the 'profile' of the entrepreneur. The average age of new entrepreneurs in Europe is about 35 years; this shows that the decision to found one's own business is frequently taken some years after completing education and acquisition of some specific know-how as employee and/or manager.

Although entrepreneurs may launch a new enterprise based on a vague sense of expected post-entry performance, they only discover their true ability - in terms of managerial competence and of having based the enterprise on an idea that is viable on the market - once their business is established.

The most successful businesses find a balance between formal and on-the-job-training, and a way to assess not just their training needs, but a path to the most suitable training from the courses and qualifications available.

In accordance with international studies, 'competence' is defined here as a combination of knowledge, skills and attitudes appropriate to a particular situation. 'Key competences' are those that support personal fulfilment, social inclusion, active citizenship and employment. The development of the knowledge society is raising demand for the key competences in personal, public and professional spheres.

The growing internationalisation of economies affects the world of work, with rapid and frequent change, the introduction of new technologies and new approaches to organising companies. Employees need both to update specific job-related skills and to acquire generic competences that enable them to adapt to change. The knowledge, skills and attitudes of the workforce are a major factor in innovation, productivity and competitiveness and they contribute to the motivation, job-satisfaction of workers and the quality of work.

The European Reference Framework sets out the eight key competences:

- 1) Communication in the mother tongue;
- 2) Communication in the foreign languages;
- 3) Mathematical competence and basic competences in science and technology;
- 4) Digital competence;
- 5) Learning to learn;
- 6) Interpersonal, intercultural and social competences and civic competence;
- 7) Entrepreneurship; and
- 8) Cultural expression.

Many of the competences overlap and interlock. Aspects essential to one domain will support competence in another.

There are a number of themes that are applied throughout the Framework: critical thinking, creativity, initiative taking, problem solving, risk assessment, decision taking, and managing feelings constructively play a role in all eight key competences.

Entrepreneurship which is of interest in the context of this paper refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports everyone in day to day life at home and in society, employees in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by entrepreneurs establishing social or commercial activity.

The essential knowledge, skills and attitudes related to competence in Entrepreneurship are:

- **Knowledge** includes available opportunities for personal, professional and/or business activities, including ‘bigger picture’ issues that provide the context in which people live and work, such as a broad understanding of the workings of the economy, and the opportunities and challenges facing an employer or organisation. Individuals should also be aware of the ethical position of enterprises, and how they can be a power for good, for example through fair trade or through social enterprise.
- **Skills** relate to proactive project management (involving skills such as planning, organising, managing, leadership and delegation, analysing, communicating, de-briefing and evaluating and recording), and the ability to work both as an individual and collaboratively in teams. The judgement to identify one’s strengths and weaknesses, and to assess and take risks as and when warranted is essential.
- An entrepreneurial **attitude** is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals or aims held in common with others and/or at work.

The high percentage of people learning at school need to be reinterpreted in the light of survey findings by the Cyprus Youth Organization that a very high proportion of persons return back to learning institutions (night school for example) in order to complete their secondary education.

It is therefore wrong to judge the future potential of a person by his/her scholarly achievement at the young age of 15-18. The best entrepreneurial achievers are not necessarily the top students from school or university. We do indeed need to cater for the late starter who perhaps is more apt to starting an enterprise.

The educational statistics show clearly the improvement of the general educational level of the Cyprus population and the tendency for tertiary education. There has been no research showing why do people go to university and why do they choose the specialisations they do. It is no secret that there is unemployment amongst people in the age group below 25 years and that many are employed in fields outside the ones they have studied. Of course this is not only a Cypriot phenomenon. It is a picture we see more or less all over Europe. Some are even talking about over education and over specialisation. Considering that when something is not used, it is eventually lost, one has to be concerned about all this waste in human capital. On the one hand nobody can argue about raising the general educational level in a society but on the other the considerable investment in raising the educational level is not recovered through parallel efforts which would channel this intellectual capital to productive utilisation.

If one looks at new company creation statistics one can observe that the number has remained fairly stable even though the education level has been improving. The message is clear the entrepreneurship gap is widening and more and more youths are waiting in line for a position rather than taking steps towards self-employment. The answer is simple. Nobody has ever pointed them in this direction or given them the tools to be able to investigate this possibility.

Another matter for which there is no data in Cyprus is the level of functional literacy. While statistics on literacy (people who can read and write are high (circa 98%) they are derived from the numbers passing through primary school. There are no statistics to show how many people at the economically productive ages can use their language and numeracy skills effectively. Surely there are many who had

never put pen and paper together after leaving school. Perhaps this deficiency, i.e. the low percentages of functional literacy, can partly explain why those with tertiary level as their highest educational attainment have much higher participation rates in non-formal education in informal learning activities. The same is observed in the employment category “Professionals”. Therefore the difficulty in bringing the SME owner/manager back to the “school desk” must not be underestimated. That is why the emphasis for entrepreneurial education must be given to secondary and tertiary level students. That is not to say that all SME owners should be abandoned. It means that a certain proportion of training must be available at the very basic level in an effort to rekindle the interest in learning for those who, for whatever reason have fallen behind.

Table 2: Development of educational attainment

Attained Level	Difficulty	Cumulative %	
		1992	2001
Not gone to school	1	4.2	2.1
Not finished primary	2	14.7	8.5
Primary school	4	40.7	29.1
Gymnasium	8	52.5	42.1
Lyceum	16	83.4	77.4
Non-University tertiary	32	91.0	87.0
University	64	96.6	99.3
University (Doctorate)	132		99.7

If one plots the arbitrary scale of difficulty on a logarithmic scale and the cumulative percentage of persons attaining that level on a probability scale one gets more or less a straight line. This shows what is intuitively known, only about half of the population is capable of learning advanced concepts of any kind. Indeed the same empirical graph may explain why those with tertiary level as their highest educational attainment have much higher participation rates in non-formal education (43.3%, 2003) and in informal learning activities (64.3%, 2003).

This intuitive graphical representation is reconfirmed using the 2003/2004 figures for the number of university graduates of which 78.84% were first degree holders, 19.68% had first level post graduate degree and 1.45% had doctorates. Again the three points fall on a straight line on the log-probability curve when we assume (arbitrarily) a doubling of “difficulty”. (Note: This makes it also easier to observe that even if we assumed any exponential index for “difficulty” the points still fall on a straight line. What the true index is, lies beyond the current knowledge and capabilities of this writer).

The intuitively obvious fact that the outstanding and exceptional are only a few, has numerous ramifications.

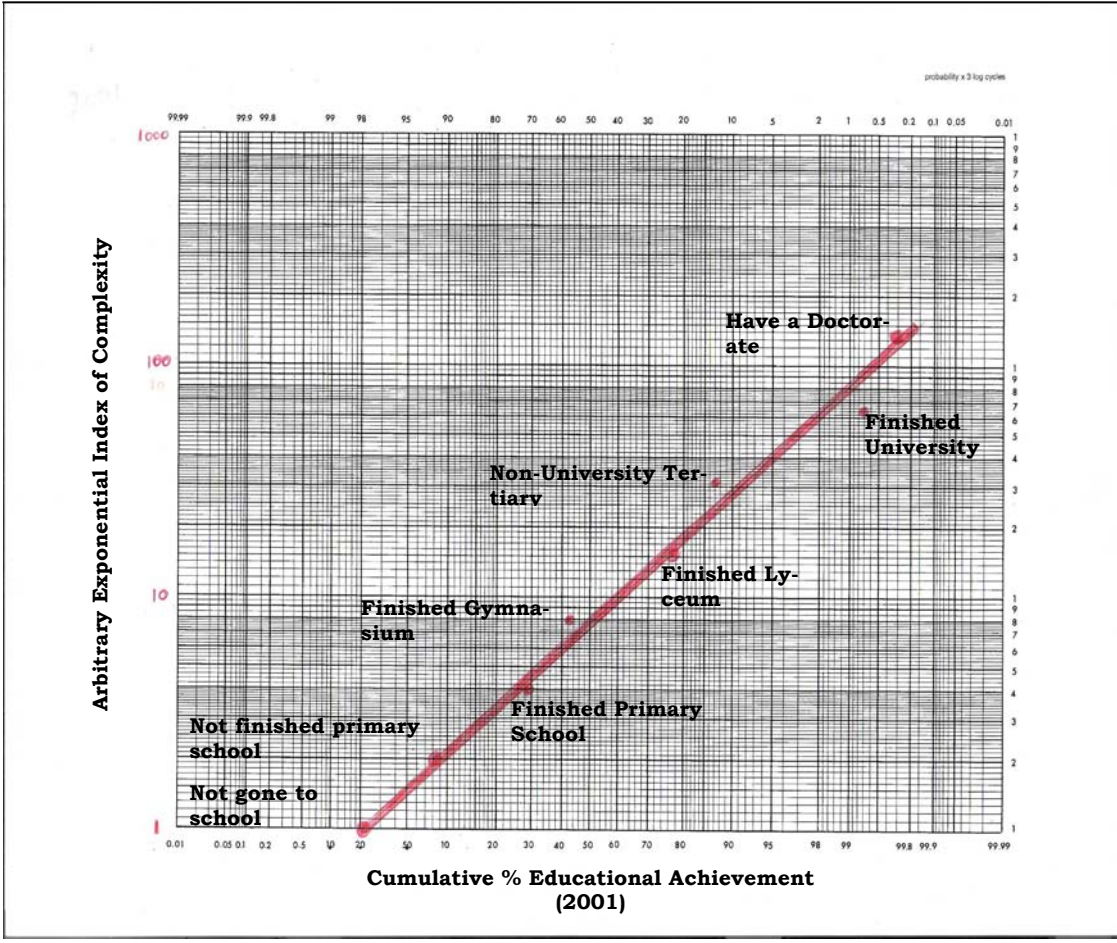
It shows, for example, that not all can be researchers, not all can be world class entrepreneurs etc. In turn this dictates to the policy makers that in order to create an environment which favours development they should assist those who are at the “high” end of the distribution to succeed since their success will create value added employment for the others. Furthermore it means that by encouraging entrepreneurship at an early age and indeed as part of the school and university curriculum one can

stimulate the “academically bright” (and not only of course) to see the commercial value of their intellectual capital thus leading to the creation of high tech and knowledge based new enterprises.

Ignoring entrepreneurship can be disastrous in the long run as it creates a society of highly educated but non-risking individuals watching the world go by and wondering why they cannot be part of its creative processes.

As an old saying goes: There are three kinds of people, those that make things happen, those that watch things happen and those asking “What happened?” Those that make things happen are those with entrepreneurial “blood and spirit”. Which of the three do you want to be?

Figure 1: Educational Attainment



Source: Ministry of Education, Cyprus.

6. Why Business Studies, MBAs etc. are not Entrepreneurship Training

To obtain these business-centric skills, some professionals seek a masters degree in their technical field because those programs not only deliver advancement on the technical side but also usually include courses that focus on management, accounting, communications, and similar areas. Others enroll in part-time evening studies; Many universities have an executive education branch where one can take a three- or six-week course concentrating on one topic.

“The other way to do it is to get a mentor within the company, go ask an executive or a more senior manager in the company for help. You can use that relationship to see what they’re doing, to see the types of communications or reports they’re writing.” Most upper-level managers and executives are open to the prospect of mentoring; being asked to serve as a mentor is flattering, so many people are enthusiastic when being asked.

For example, an IT manager working at an SME can more easily reap satisfaction from the results of personal work, find opportunities to manage projects of different scopes, gain autonomy to make technology decisions for the company, and develop high-level relationships with company executives.

The question that confronts those that teach entrepreneurship is how broad and inclusive is the context that is presented to the student. Our answer is “as broad as possible” including production engineering, business, industrial design and social sciences. The characteristics valued by employers. These characteristics include professional competency, industry experience, multi-functional communications skills, team-orientation, problem solving and decision making skills in ill-structured situations, and self-direction.

One of the greatest challenges facing the trainer of adults in the various professions and of entrepreneurs in particular, is how to simplify the various subjects and topics and still retain a chance that their basic principles can be put into practice or used in the decision making process.

One of the main constraints to the training of small entrepreneurs is the time. Both trainer and trainee must strive in maximizing the impact of what little time is available. Of course there is no substitute to the willingness and to the desire to learn but it also disheartening to find that one’s very valuable few hours have been squandered by an incapable trainer who could not transmit in a simple and understandable manner that knowledge which can result in competence when adequately practiced.

Is this entrepreneurship training? I believe it is not. First of all, the vast majority of the teachers have no entrepreneurship experience. The spirit of enterprise cannot be transferred by someone who chose to be an employee. Perhaps most of the teachers are not able to run a corner sweet shop. Quite often decisions in a business situation need to be done with split second timing or situations need to be handled in ways where there is no room for errors in judgement.

7. What Are We Going to do About It?

With most of the world's business being conducted by small entrepreneurs, it makes good economic sense for governments to implement policies that encourage small-business growth. The five ways in which government can have the most positive effect are by making capital more accessible, facilitating business education, promoting entrepreneurship, reducing regulatory burdens, and protecting intellectual property.

If a government wants to promote small businesses, it must advance policies that reduce the risk inherent in entrepreneurship. That way, people will be more willing to leave the comforts of their jobs and start new businesses.

So the first necessary political task to promote small-business development is one that assists would-be entrepreneurs to find the money they need to get started.

There are many things that go into creating a successful small-business economy, but surely a significant one is a collection of entrepreneurs willing to start new businesses. Before that occurs, people must be able to learn business skills. There are several ways in which governments can assist them in doing this: The answer to these dilemmas is the introduction of the subject of entrepreneurship into the curricula of all schools and universities for all disciplines as well as into any vocational training (formal or informal). It is an interdisciplinary issue.

Of course entrepreneurship must not be restricted to the narrow definition of “starting and running one’s own business” but to a much broader definition of “identifying and exploiting opportunities” or perhaps more correctly “the process of identifying, developing and bringing a vision to life. The vision may be an innovative idea, an opportunity, or simply a better way to do something. The end result of this process is the creation of a new venture, formed under conditions of risk and considerable uncertainty” (Entrepreneurship Centre, Miami University of Ohio).

Researchers have been inconsistent in their definitions of entrepreneurship. To some people the term even connotes anti-social behaviour for illegitimate profiteering. Some researchers also differentiate the management of small enterprises from entrepreneurship per se.

Instead of wasting effort in trying to find a unique or unifying definition let us look at the practical side of things.

If we assist the new generation to look at self-employment as a career path and if we assist those who have the courage to venture out on their own to succeed, then we can create many new job opportunities. The employees sought by the micro-enterprise must be multi-skilled because they will be called to wear many hats.

Entrepreneurship is a major factor in the national economy; thus, it is important to understand the motivational characteristics spurring people to become entrepreneurs and why some are more successful than others.

We found that achievement motivation was significantly correlated with both choice of an entrepreneurial career and entrepreneurial performance.

Main competencies required by European enterprises in the future:

- Learning to learn;
- Information processing and management;
- Deduction and analytical skills;
- Decision making skills;
- Communication skills, language skills;
- Teamwork, team based learning and teaching;
- Creative thinking and problem solving skills;
- Management and leadership, strategic thinking;
- Self-management and self-development;
- Flexibility.

8. The Myths About Education, Literacy and Quality of Enterprise Management

A common complaint from university professors and from employers is the poor quality of the human capital they have to work with. The employer is increasingly, and at very high cost taking over the role of sorting the good from the bad and of filling the gaps in basic skills left by the rapid progression through the educational system. Our society has applied the legitimate demand for equal opportunity to damaging proportions producing impressive statistics in the form of throughput numbers but with little reference to output quality. Parents are as much to blame for this as politicians and planners.

The employer in an SME, with the recognizable need for a multi-skilled labour force, is confronted with the challenge of the restricted selection from the pool of all those rejected by the “big-boys”. The crème de la crème of intellectual capital never returns to enterprise being absorbed by the Universities and the research centres. The very good and good graduates or technicians are taken up by government, semi governmental organization and multi-nationals who offer better and more secure packages. So what are SME’s left with when the AAA and AA quality grades are skimmed off? With this academically average stock the SME must make its strategic plans and implement actions to sustain it and improve it.

The comforting fact is that the academic high flier is not necessarily the best entrepreneur, just like an inventor is not necessarily an entrepreneur. Likewise an individual with a high IQ and excellent business management skills does not qualify for the tag of entrepreneur simply because he/she has formed an idea for a new business. In fact, recent research shows that aspects such as dyslexia and high emotional intelligence have been found to have a strong correlation among entrepreneurs.

When all this is carefully considered one cannot but come to the conclusion that Entrepreneurship Education deserves far more attention as hitherto given to it. It has to be a nationally planned effort and not a chaotic hit or miss process left to each individual.

'Competence' is defined as the mix of human knowledge, skills and aptitudes serving the enterprises' productive purposes and therefore its competitiveness. 'Competence development' therefore can be defined as the measures taken by any enterprise to develop its competence base.

The European Commission defines competence as the capacity to use experience, knowledge and qualifications effectively.

Studies show that up to 80% of European SMEs take a number of initiatives to improve their competence base available among their in-house human resources in addition to 'formal' methods linked to courses/seminars/conferences provided by external trainers. Non-formal methods linked to 'learning from others' and 'on-the-job' practices are widely used by SMEs. The most important methods are visits to expos/trade fairs, reading of professional literature or meetings amongst personnel for knowledge exchange. Other non-formal initiatives used include co-operation with consultants and advisers for developing the internal competence base, courses provided by own personnel, study visits, tutor/mentoring activities and job rotation (inhouse or with other firms). The fact that visits to expos/trade fairs is the European SMEs' main method for competence development may also cast some light on the weaknesses of these activities, as well as on the difficulty of reaching the European goals in terms of knowledge building.

If firms are unaware of their competition then it is unlikely to change their investment behaviour. Providing information about the firm type and its relative productivity may improve the decision-making context for smaller firms.

9. The Challenges for Today's Knowledge Based Enterprises

The employed scientist or engineer has no reason to leave the enterprise, if he/she can pursue his/her new idea within the organisational structure of the enterprise developing the knowledge and appropriate roughly the expected value of that knowledge. Otherwise, if he/she places a greater value on his/her ideas than on the decision-making bureaucracy of the enterprise for whom he/she works, he/she may choose to start a new enterprise to appropriate the value of his/her knowledge. Small enterprises can compensate their lack of R&D through spillovers and spin-offs. The employee will weigh the alternative of starting his/her own enterprise: If the gap in the expected return accruing from the potential innovation between the inventor and the corporate decision maker is sufficiently large, and if the cost of starting a new enterprise is sufficiently low, the employee may decide to leave the large corporation and establish a new enterprise. Since the knowledge was generated in the established corporation, the new start-up is considered to be a spin-off from the existing enterprise. Such start-ups typically do not have direct access to a large R&D laboratory. They rather succeed in exploiting the knowledge and experience accrued from the R&D laboratories with their previous employers.

SME Contribution to Productivity Growth

Firm productivity measures how much input is needed to produce the firm's output. Output is measured by the volume of goods and services. There are different measures of productivity depending upon what inputs are measured. Labour productivity measures the output per unit of labour, the unit can be output per hours worked or simply per worker.

Different measures trade-off simplicity for analytical power. For example, output per worker is easier to calculate; whereas hours worked shows whether it is the longer hours that add to output, rather than the efficiency of the process. **Labour productivity** is useful for policy makers because it shows the output per worker and the rising incomes depend on this measure. However, this is a partial view of productivity. **Total factor productivity (TFP)** measures all the inputs to the firm. This provides a better, more rounded picture of firm productivity, but can be difficult to estimate.

In most countries, labour productivity in SMEs is below average, the same holds for profitability. Low levels of labour productivity result in higher labour costs for SMEs. They also have a lower export tendency than LSEs.

Over time, SMEs contribute to overall productivity in three ways:

1. Small firms act as a seedbed for innovations. This seedbed role is most noticeable in small manufacturing firms who employ between 5-9 employees.
2. The growing small firm can disrupt the 'cosy relationships' built up within an industry, and heighten competition.
3. Entrants compete with existing firms and cause those performing badly to exit.

The productivity of a firm or plant reflects the amount of capital per worker and its technology. But the underlying causes of differences in capital per worker are not obvious.

On the whole, SMEs are riskier than larger companies, and they may face higher costs of capital, which trims their ability to raise it. Moreover, their managerial capacity may be lower than that of larger firms, again reducing their ability to raise capital. Hence, SMEs may gather fewer capital resources, including technology, than larger firms. In general, SMEs pay lower wages than larger firms; therefore, smaller firms may be last in the queue for highly skilled labour. Firms need skilled workers to embrace new methods and get the best use from new investment. Consequently, SMEs may find themselves located towards the low end of a productivity/wage/skill scale.

SMEs which commit to management, improvement and evaluation of business skills will reap not just the rewards of increased profits, but will create a fundamentally healthy market - something of value to all of us.

There is growing recognition that new employees in any industry would be more immediately productive if they started with a broader view of the world. (R. C. Brown *Biorenewable Resources*, Blackwell, 2003).

Indeed the ambiguity in the minds of most planners as to what is the meaning of the terms entrepreneurship and entrepreneurship education and training may be at the root of the current situation.

It needs to be recognized that the success of anyone in creating a new enterprise is equivalent to creating new jobs for people who may not be so daring and have greater need for a sense of security. Knowing that those who dare start a new business are only a few, it become imperative for society to create incentives and assistance schemes for such persons.

Looking at the laws and regulations one cannot fail to wonder why should anybody undergo so much hustle in creating and heading a new business. I don't propose any relaxation in the requirements of the laws. What I do propose is a system whereby persons acting entrepreneurially are assisted (start being made in the educational system) in adapting into the realities in a much easier manner than currently.

In order to make full use of their skills, graduates need new opportunities to apply them. Traditional graduate jobs will not absorb the growing numbers of graduates. The greatest potential is likely to be in smaller businesses, which have not tended to recruit graduates in the past. Instead they find themselves facing the challenge of a small business, or in positions previously filled by school-leavers. In even the larger companies, decentralization often means that small company conditions exist. But to make this work, small businesses will need to understand the benefits graduates can bring. Graduates will also need to understand the labour market.

10. Career Management Skills and Effective Learning Skills

As the landscape of careers continues to change, the process of targeting the necessary skills and experience to get ahead grows ever more challenging.

As a result, companies have more choices when looking to promote or hire, and this competition means that one can't afford to lose his/her edge. With fewer jobs available having a wide-ranging skill

arsenal is essential, particularly as convergence expands and increasingly demands the ability to handle multiple technologies.

“If one finds oneself stagnating, and not updating one’s knowledge base and skill and not getting training, then one is not standing still – he/she is falling behind”.

While specialists remain in demand at large enterprises, small to medium-sized enterprises generally can’t afford to fill their buildings with personnel who each handle only one technology. When it comes to managers, seeking training in other areas will ensure that they can handle the responsibilities and decision-making across more of the business infrastructure, instead of placing certain demands on the shoulders of others.

“The other thing is critical business skills. Battles are won or lost not in the technology itself, but in the relationships and the dealings with management.”

It’s now crucial to obtain skills such as project management, leadership, and business communications, as well as finance and accounting, so that would-be managers can handle budget-related tasks. These skills can help business managers converse more effectively with executives in other departments, such as sales or manufacturing, and that communication will increase involvement in regular contributions to the business.

Figure 2: Business Skills

Self-Reliance Skills	The self-reliant graduate is aware of the changing world of work, takes responsibility for his or her own career and personal development and is able to manage the relationship with work and learning throughout all stages of life.
Self-Awareness	The self-aware graduate is: <ul style="list-style-type: none"> ▪ able to clearly identify skills, values, interests and other personal attributes. ▪ able to pinpoint core strengths and "differentiating factors". ▪ equipped with evidence of abilities (e.g. summary statement, record or "potential"). ▪ actively willing to seek feedback from others, and able to give constructive feedback. ▪ able to identify areas for personal, academic and professional development.
Self-Promotion	The graduate is able to: <ul style="list-style-type: none"> ▪ define and promote own agenda. ▪ identify "customer needs" (academic/community/ employer) and can promote own strengths in a convincing way, both written and orally, selling "benefits" to the "customer", not simply "features".
Exploring and Creating Opportunities	The graduate: <ul style="list-style-type: none"> ▪ is able to identify, create, investigate and seize opportunities. ▪ has research skills to identify possible sources of information, help and support.
Action Planning	The graduate must be: <ul style="list-style-type: none"> ▪ able to plan a course of action which addresses: *Where am I now? * What do I want to be? * How do I get there? ▪ able to implement an action plan by: *Organizing time effectively * Identifying steps needed to reach the goal * Preparing contingency plans ▪ able to monitor and evaluate progress against specific objectives.
Networking	The graduate: <ul style="list-style-type: none"> ▪ is aware of the need to develop networks of contacts.

	<ul style="list-style-type: none"> ▪ able to define, develop and maintain a support network for advice and information. ▪ has good telephone skills.
Matching and Decision Making	<p>The graduate:</p> <ul style="list-style-type: none"> ▪ understands personal priorities and constraints (internal and external). This includes the need for a sustainable balance of work and home life. ▪ is able to match opportunities to core skills, knowledge, values, interests etc. ▪ is able to make an informed decision based on the available opportunities.
Negotiation	<p>The graduate is:</p> <ul style="list-style-type: none"> ▪ able to negotiate the psychological contract from a position of powerlessness. ▪ able to reach "win/win" agreements.
Political Awareness	<p>The graduate:</p> <ul style="list-style-type: none"> ▪ understands the hidden tensions and power struggles within organizations. ▪ is aware of the location of power and influence within organisations.
Coping with Uncertainty	<p>The graduate is:</p> <ul style="list-style-type: none"> ▪ able to adapt goals in the light of changing circumstances. ▪ able to take myriads of tiny risks.
Development Focus	<p>The graduate:</p> <ul style="list-style-type: none"> ▪ is committed to lifelong learning. ▪ understands preferred method and style of learning. ▪ reflects on learning from experiences, good and bad. ▪ is able to learn from the mistakes of others.
Transfer Skills	<p>The graduate:</p> <ul style="list-style-type: none"> ▪ is Able to apply skills to new contexts.
Self-Confidence	<p>The graduate:</p> <ul style="list-style-type: none"> ▪ has an underlying confidence in abilities, based on past successes. ▪ also has a personal sense of self-worth, not dependent on performance.

Source: own illustration.

There is an urgent need for the skills of Self-Reliance. In the past they have been assumed or neglected by both employers and higher education institutions. They cannot be neglected any longer, and there are several factors, which summarize the reasons why these skills are so important:

1. Career transitions are more frequent whereas jobs are less secure. Even in higher education, modularization has increased the number of choices to be made. So the skills to manage career transitions are essential.
2. Graduates need to manage uncertainty and change as they are frequently exhorted to achieve the impossible: to be "comfortable" with constant change and uncertainty. Anyway change is never comfortable. However, there are skills, which enable people to cope with change. Some of these skills are those which enable people to learn in order to adapt to change. Lifelong learning is not just a '90s buzzword. It is an essential survival tactic for the 21st century.
3. Knowledge rapidly becomes obsolete as the world is changing so fast that knowledge and skills soon become obsolete. In addition, more frequent career transitions accelerate this, making it necessary to learn new skills and adapt to new situations. Degree-based knowledge will rapidly become useless unless a degree has also provided learning skills of the highest order.
4. Supporting structures have disappeared. Organizational structures have previously supported people in their career and personal development. Now, many of these supporting structures

have disappeared. Slimmed-down personnel departments indicate that "self development" is the order of the day. In SMEs, few formal training and development structures exist. The smaller the organization, the greater the need for self-reliance skills.

5. Growing student-staff ratios the growing number of students and declining "unit of resource" mean that some of the changes in business are mirrored in higher education. Information technology will have a role to play in over-coming this situation, but this can only be effective if students can become self-reliant learners. The work of university teaching staff will then be focused on enabling learning rather than teaching knowledge.
6. Graduates need to be "flexible and adaptable" as the pace of change is often reflected in the demands of employers for graduates who are "flexible and adaptable". The concept of flexibility has a simple meaning. It is the ability to adapt and apply existing capabilities to new situations. It is therefore, to a large degree, about the transfer of skills.
7. The graduate's greatest future challenge is "managing the relationship with work". This will include negotiating with an employer or client, often from a weak position. The increasing number of sub-contractors and part-timers creates the risk of being exploited. This makes self-reliance, especially negotiation skills and political awareness, even more important.

The Complete Graduate

Self-reliance skills are the enabling skills, which will be essential for graduates to survive in the 21st century. They are the skills to manage a lifetime's progression in learning and working, rather than to do the work itself. They are process skills rather than functional skills.

This differentiates them from the other attributes which graduates need in the workplace. The complete graduate needs four types of skills:

Self-reliant: Graduates must be able to manage their career and personal development (e.g. confidence, self-awareness, action planning, political awareness).

Connected: Graduate must be team players (e.g. management skills, meetings skills, negotiation skills, networking skills, presentation skills).

Specialist: It helps to be an expert at something (e.g. marketing, tax, accounting, family law, aerospace engineering, marine biology, organizational psychology).

Generalist: Graduates must have general business skills and knowledge (e.g. finance/basic accounting, written communication, problem-solving, use of IT).

11. How is Higher Education Valued?

Why do people go to university? Many studies indicate that the majority of people who attend university as students do so with some aspect of career or lifestyle enhancement as their major rationale for the sacrifices in time and earnings that are involved.

Without entering the debate about "vocational" versus traditional liberal-arts and science degrees, I can be confident that most students have an expectation that the university experience will be fulfilling from at least the employment-readiness perspective. Employment-readiness is a complex topic. I like to think that as an issue for universities it can and should co-exist perfectly happily with academic attainment – focused on the honing of intellect and the gaining of knowledge.

The Role of Universities

Universities play a vital role in passing on fundamental knowledge – whether it is based in science or humanities. To this, universities add modern thought, current technologies – the tools that will be useful in the 21st century. Given the appropriate infrastructure development and investment, there is the potential for brilliant careers in both the traditional professional and administrative roles occupied by graduates, and in the emerging fields of technology.

Over the centuries universities have also contributed to an individual's broader personal development. During the last decade there has been a growing focus on the so-called soft skills. Variously discussed as generic skills and personal attributes, they include analytical, communication and team-working skills. They were summarised as “self-reliance skills”.

In addition to traditional teaching and skills development, many institutions offer direct exposure to employers, professional bodies and potential future clients. Co-operative education, compulsory or voluntary work experience, business projects, mentoring and so on, are collectively called experiential learning. It is my observation that across the higher education system the opportunities for experiential learning are few and little recognised for their value.

Collaboration

I believe that students of all disciplines deserve the opportunity to have that type of exposure. We should endorse the concept of: “staff from both sectors moving freely across boundaries in order to engage in new and expanding forms of collaboration”.

How is higher education valued? A recent study from the University of Melbourne estimated that over a working lifetime, a graduate has a \$400,000 salary advantage over others not completing tertiary education. However the other big winner is of course society itself. The OECD's most recent Economic Outlook report covers the topic: “Investment in human capital through post-compulsory education and training”. It observes that: “social rates of return are also high, even if they are lower than the private rates, and point to the benefits of investment in post-compulsory education for society as a whole”.

Employment Readiness/Outcomes

We need to pay more attention to employment-readiness issues and actual employment outcomes of the system than we do so far. The debate about our capacity to operate one, two or more “world class” universities – in other words to compete effectively in the international knowledge economy – may currently only capture headlines in the educational media. At the heart of this is undeniably our wish to be amongst the world's leaders in research and development. However, for the bulk of those thousands who attend university primarily in order to further their career, the universities are expected to provide core knowledge, modern techniques, generic skills and perhaps, experiential learning.

It's a big question – but do we have a choice? I think not, whether we look at the country's development from an internal or an international perspective. Nothing less than the economic and social future of our country is at stake when we are dealing with the preparation of graduates for employment.

Elaine O'Reilly makes this point in her book, *Skills for the New Economy*. O'Reilly claims that in the next few years, two-thirds of the new jobs created will require more than Grade 12. Almost half will

require 17 or more years of education. But education doesn't stop there. Throughout your working career, you'll need to continue learning in order to keep your skills current.

Generic Skills

In addition to high-level skills, you also need generic skills. In fact, generic skills are as important as technical expertise. Often they are what employers are really looking for. The Conference Board of Canada has a list of the "employability skills" that employers seek. These are:

Academic Skills	Academic skills include the ability to communicate, to work through problems on the job, and the willingness and ability to continue learning all through your working life.
Personal Management Skills	Many people think these skills are part of your personality and can't be changed. But these skills can be learned just like any other. Examples include: <ul style="list-style-type: none">▪ having a positive attitude toward your work, your employer, and the other people in your workplace▪ being able to adapt to changing job conditions and new situations
Teamwork Skills	These are needed since many organizations use a team approach. Team members need an ability to: <ul style="list-style-type: none">▪ work with people with very different backgrounds and mind-sets▪ plan and make decisions with others and support the outcomes▪ work without clear job descriptions

Employability Skills are not job specific, but are skills which cut horizontally across all industries and vertically across all jobs from entry level to chief executive officer.

Discussions of the need for educational reform and restructuring typically include concern about the gap between the skill requirements for entry-level employment and the skill levels of entry-level job applicants.

Business and industry representatives express considerable dissatisfaction with the general level of preparedness of prospective entry-level employees. According to research conducted more than half of young people leave school without the knowledge or foundation required to find and hold a good job. Employers' dissatisfaction with young job applicants is not primarily due to inadequate technical knowledge or skills. A review of the literature indicated that employers have no quarrel with the skills performance of today's graduates, but they do have serious reservations when it comes to their non-technical abilities.

Another name for these "non-technical abilities" is *employability skills*. Simply stated, employability skills are the attributes of employees, other than technical competence, that make them an asset to the employer. These employability skills include reading, basic arithmetic and other *basic skills*; problem solving, decision making, and other *higher-order thinking skills*; and dependability, a positive attitude, cooperativeness, and other *affective skills and traits*.

There is also, however, a great deal of agreement among the skills and traits identified. Comparisons of the employability attributes listed by the different researchers revealed those that were cited most frequently. These were then organized into the three categories of *basic skills*; *higher-order thinking skills*; and *affective skills and traits*, as shown in the display on the following page.

Figure 3: Employability Skills

Basic Skills	Higher-Order Thinking Skills	Affective Skills and Traits
Oral communications (speaking, listening)	Problem solving	Dependability/Responsibility
Reading, esp. understanding and following instructions	Learning skills, strategies	Positive attitude toward work
Basic arithmetic	Creative, innovative thinking	Conscientiousness, punctuality, efficiency
Writing	Decision making	Interpersonal skills, cooperation, working as a team member
		Self-confidence, positive self-image
		Adaptability, flexibility
		Enthusiasm, motivation
		Self-discipline, self-management
		Appropriate dress, grooming
		Honesty, integrity
		Ability to work without supervision

Failure to equip young people with employability skills has far-reaching consequences.

A final reason for the increased interest in equipping young people with basic, higher-order, and affective skills is the growing awareness of what happens when great numbers of people lack these qualifications. "America may have the worst school-to-work transition system of any advanced industrial country", writes the Commission on the Skills of the American Workforce, commenting on our nation's failure to provide young people with a solid foundation of employability skills. The following quotes were stated by other observers regarding this failure and its consequences:

- We must remember that employment and employability are not the same thing. Being employed means having a job. For an adolescent or adult, who is not adequately prepared, having a job is likely to be a temporary condition. Being employable means possessing qualities needed to maintain employment and progress in the workplace.
- For most young people, the United States have a more or less do-it-yourself system for making the transition from school to work....what they learned in school is not adequately related to what they need to know to succeed after leaving school.
- The socio-economically disadvantaged young - male or female - face almost impenetrable employability barriers.
- The employment picture for black and Hispanic young Americans who do not continue education in college is horrible-and it worsened in the 1980s. According to 1990 data, only 29 percent of black high school dropouts between the ages of 16 and 24 are working at any job and only a little more than half of all black youths with high school diplomas are employed.

- Roughly one-third of all high school graduates, and somewhat more high school dropouts, fail to find stable employment by the time they are thirty. For this group, the rather casual American system does not work well.
- Work-related failure or even unsatisfactory work experience can have serious negative repercussions for the well-being of those unfortunate enough to experience it.

Some writers have gone on to argue that providing young people with qualifications for employability is, among other things, an ethical responsibility. Bhaerman and Spill (1988) write: "This is not just an economic issue, it is one of equity and fairness."

They continue: "Think about employability skill development as one of the civil rights issues....Those responsible for programs in this area have a moral obligation to provide the most complete education and training possible for students and clients."

In like fashion, Rosove (1982) writes: "Work is of central importance to the well-being of people in our society. We take a large part of our identification from it and thus it forms a significant part of our self-concept....There is a strong ethical and practical imperative facing all of us who help prepare people for the labour market: to ensure that our clients or students are well-prepared to enter working situations."

Employability skills are best learned when they are included among instructional goals and explicitly taught.

This assertion may seem obvious. However, there are still many vocational and "regular" programme teachers and administrators who believe that students will pick up these skills and abilities incidentally in the course of growing up and being in the public schools. The above mentioned research, conducted with employers, makes it clear that this is not the case.

Others believe that some capabilities-particularly critical and creative thinking as well as affective traits such as a positive attitude and a cooperative manner-are qualities that people either have or don't have. In other words, they do not see these qualities as teachable.

Research, however, shows that these **employability skills and traits are very amenable to being taught.**

Entrepreneurs from specific ethnic communities are now a readily apparent part of the business landscape in many countries of the world. Historically, entrepreneurship has emerged in specific groups organized along ethnic, religious, or other subcultural lines. Examples include the Jews in medieval Europe, Marwaris, Jains, and Chettiars in India, Hokkiens/Fukiens in China, the Medici merchants in Italy, as well as more recently, the Tan, Lee, Ng, and Gan clans in Singapore (Iyer 1999; Kotkin 1993; Landa 1981). Even the Protestant Ethic, which could be considered a major impetus towards the origins of modern capitalism in the West, has its basis in the rise of a religious worldview that was more conducive to modern business (Weber 1952).

Historic trading groups and communities apart, some modern entrepreneurship is also organized along ethnic lines. Enclaves of ethnic entrepreneurs can be found in the U.S. and other countries of the West. Some examples include the East Indians in Edison, New Jersey; Cubans in Miami; Koreans in Chicago and Los Angeles, and Chinese in San Francisco and Vancouver (Light 1972). Several reasons have been suggested for such ethnic identity and proximity within an overall modern business and professional ethos. Entrepreneurship may arise from lack of suitable labor market opportunities (espe-

cially due to language barriers and discrimination), desire to amass wealth and return to one's homeland, and/or from business opportunities created by a growing community of co-ethnics (Aldrich and Waldinger 1990). Moreover, such entrepreneurs often retain their distinct ethnic identity and form close linkages with co-ethnic workers and consumers, while choosing to remain segregated from the mainstream culture.

Despite the importance of cultural factors, traditional theories of entrepreneurship give only scant attention to cultural factors in the rise of entrepreneurship and subsequent business strategies. The dominant economic and psychological factors that are conventionally used in the literature are limited in explaining entrepreneurship and business strategies among groups that are organized along ethnic lines. However, some literature on entrepreneurial motivations, formation of enclaves, use of ethnic and class resources, and the proclivity to specific business forms ethnic entrepreneurs is found in sociology (Aldrich and Waldinger 1990; Bonacich 1973; Light 1972).

Drawing on this latter literature, we explore further the specific cultural factors that contribute to the rise of ethnic entrepreneurship and how such entrepreneurs differ in their use of family and community resources from their majority counterparts. Our focus is also on business strategy differences of ethnic entrepreneurs and their majority counterparts.

Specifically, we find that ethnic entrepreneurs are quite intricately connected to family and community sources of support. This is in contrast to the rugged, individualistic, and self-made entrepreneur, paragon in Western business literature. Moreover, the cultural ties and specific cultural factors, of which identity is one, enable the ethnic entrepreneur to view business conduct and strategies rather differently from that emphasized by the majority entrepreneur. One unique finding is the ethnic entrepreneurs' emphasis on business cash flow and turnover rather than on margins. These and other cultural explanations enable us to suggest several implications of ethnic competition in the economy. Moreover, we suggest that the spread of such entrepreneurship across national borders may be characteristic of the next phase of globalisation – one that merges and extends the historical nexus of cultural identity and trade in interesting ways.

The SofE-IDEA concept is formatted in a manner which adopts fully the recommendation of the European Parliament and of the Council on the establishment of a European Qualifications Framework for lifelong learning.

Firstly the following definitions apply, as taken from the recommendation:

- a) 'qualification' means a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards;
- b) 'national qualifications system' means all aspects of a Member States' activity related to the recognition of learning and other mechanisms that link education and training to the labour market and civil society. This includes the development and implementation of institutional arrangements and processes relating to quality assurance, assessment and the award of qualifications. A national qualifications system may be composed of several subsystems and may include a national qualifications framework;
- c) 'national qualifications framework' means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved. This aims to integrate

and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society;

- d) ‘sector’ means a grouping of professional activities on the basis of their main economic function, product, service or technology;
- e) ‘international sectoral organisation’ means an association of national organisations, including for example employers and professional bodies, which represents the interests of national sectors;
- f) ‘learning outcomes’ means statements of what a learner knows, understands and is able to do on completion of a learning process and are defined in terms of knowledge, skills and competence;
- g) ‘knowledge’ means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practises that is related to a field of study or work. In the European Qualifications Framework, knowledge is described as theoretical and/or factual;
- h) ‘skills’ means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the European Qualifications Framework, skills are described as cognitive (use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments);
- i) ‘competence’ means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and/or personal development. In the European Qualifications Framework, competence is described in terms of responsibility and autonomy.

The “national qualifications system” as it applies to entrepreneurship may be non existent and it is the aspiration of the SofE-IDEA project through the formation of the “European Entrepreneurship Institute and its representative organisations (subsidiaries) in each country to become part of the national qualifications system, covering the sphere of entrepreneurship.

The following table, taken also from the recommendation relates to the levels of SofE-IDEA again as it can be applied to entrepreneurship.

12. Compatibility with the Framework for Qualifications of the European Higher Education Area

The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle.

			ised field of work or study	work or study contexts, take responsibility for managing professional development of individuals and groups
Level 7*** The learning outcomes relevant to Level 7 are	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking critical awareness of knowledge issues in a field and at the interface between different fields		Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches, take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8**** The learning outcomes relevant to Level 8 are	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields		The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research.

- * The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5
- ** The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area corresponds to the learning outcomes for EQF level 6
- *** The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area corresponds to the learning outcomes for EQF level 7
- **** The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area corresponds to the learning outcomes for EQF level 8

More specifically the three levels of SofE correspond to the following levels of the European Qualifications Framework.

Figure 4: Comparison of the qualification levels

SofE Level	EQF Level
Basic	1 and 2
Advanced	3 and 4
Life Long Learning	5 and 6
	Levels 7 and 8 are levels for the specialist and can be achieved by a candidate of SofE but not through the SofE mechanism

Source: Authors own illustration.

Quality control is an integral part of the SofE-IDEA concept. The recommendation, in Annex I gives the following principles for quality assurance in education and training:

- Quality Assurance which is necessary to ensure accountability and improvement of education and training should be carried out in accordance with the following principles.
- Quality assurance policies and procedures should cover all levels of education and training systems.
- Quality assurance should be an integral part of the internal management of education and training institutions.
- Quality assurance should include regular evaluation of institutions or programmes by external monitoring bodies or agencies.
- External monitoring bodies or agencies carrying out quality assurance should be subject to regular review.
- Quality assurance should include context, input, process and output dimensions, while giving emphasis to outputs and learning outcomes;
- Quality Assurance systems should include the following elements:
 - clear and measurable objectives and standards;
 - guidelines for implementation, including stakeholder involvement;
 - appropriate resources;
 - consistent evaluation methods, associating self-assessment and external review;
 - feedback mechanisms and procedures for improvement;
 - widely accessible evaluation results.
- Quality Assurance initiatives at international, national and regional level should be coordinated in order to ensure overview, coherence, synergy and system-wide analysis.
- Quality Assurance should be a cooperative process across education and training levels and systems, involving all relevant stakeholders, within Member States and across the Community.
- Quality Assurance guidelines at Community level may provide reference points for evaluations and peer-learning.

These principles are incorporated in the SofE concept through:

- 1) The use of expert panels to review and update the syllabus and curriculum on a permanent basis

- 2) the accreditation of the European Entrepreneurship Institute by independent accrediting bodies
- 3) The adoption of ISO 17025 as the fundamental norm for the operation of the EEI.

What SofE-IDEA does not intend to do is to interfere in anyway with training professionals and influence the way they conduct their work. So there will be no registers of approved trainers or accredited training centres of any sort.

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Employability Characteristics	What employers require	What European Enterprises Require	Characteristics of the Entrepreneur
<ul style="list-style-type: none"> ▪ Self-Reliance Skills ▪ Self-Awareness ▪ Self-Promotion ▪ Exploring and Creating Opportunities ▪ Action Planning ▪ Networking ▪ Matching and Decision Making ▪ Negotiation ▪ Political Awareness ▪ Coping with uncertainty ▪ Development Focus ▪ Transfer Skills ▪ Self-Confidence ▪ Reading ▪ Basic arithmetic ▪ Problem solving ▪ Decision making ▪ Higher order thinking skills ▪ Dependability ▪ Positive attitude ▪ Cooperativeness 		<ul style="list-style-type: none"> ▪ Learning to learn ▪ Information processing and management ▪ Deduction and analytical skills ▪ Decision making skills ▪ Communication skills, language skills ▪ Teamwork, team based learning and teaching ▪ Creative thinking and problem solving skills ▪ Management and leadership, strategic thinking ▪ Self-management and self-development ▪ Flexibility 	<p>Some of the main attributes of entrepreneurs are risk taker, innovator, initiator, opportunity seeker and problem solver.</p>
Ref:	Ref:	Ref:	Ref:

Tracking Enterprise and Entrepreneurship Training in the Estonian School

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Abstract

The article describes the background and analyses the Entrepreneurship Education (ENTEDU) development project launched by the Centre for Entrepreneurship at the University of Tartu, Estonia. The first of its kind in Estonia, a pilot training course for teachers of entrepreneurship was launched in 2007 with 60 participants. The needs and goals of participants were identified on the basis of their letters of motivation, which displayed that the group was highly motivated and had well-defined goals and needs. The action research method was used during the pilot programme. Among other more or less traditional working methods, the original knowledge and idea sharing method “nesting tree model” is implemented.

Initial conclusions: although the level of entrepreneurship education depends on the methods selected by teachers and their communication styles, the article will show that a central issue is the application of teaching styles and practical activities which lead to learning through joint activities.

Key Words: enterprising behaviour, mindset, attitude, motivation, teaching styles.

1. Introduction

Entrepreneurship is a priority in the European Union, it is a key factor in the prosperity and successful development of the member states (European Commission, 2002). Therefore discussions about enterprise and education have become more central over the past twenty years (Kyrö, 2005). The role of small companies is increasingly important in society, and many member states are aiming to introduce entrepreneurship education into their school systems and have increased the number of business programmes in universities (Kyrö, 2005; Carrier, 2005; Mets, Andrijevskaja and Varblane, 2008; Kolbre, Piliste and Venesaar, 2006). Entrepreneurial people are a valuable asset to a nation, most importantly because they create new jobs, take risks and are willing to take responsibility. A capable workforce becomes concentrated in companies which have capable managers or leaders. Being a manager or director is not necessarily the same as being a leader. A key issue is to develop leaders. People do not become businesspeople or leaders overnight, it is a process of growing and learning. Thus the number of business related programmes has rocketed all over the world.

Modern business environments expect learning to focus on the development of individual skills, such as self-management, listening skills, the courage to make an effort, coping with failure, critical analysis skills, problem-solving skills, systematic thinking, planning and organising, skills for making

decisions, skills for managing change, tolerance, patience, coping with disagreement, supervising cooperation between people of various cultural backgrounds, teamwork, presenting skills, etc. (Golff, 2004; Shotick, 1997; Stephenson, 1997; Wheatley, 1999; Wilde, 2004). Many researchers and practitioners support competence development through action – or action learning (Ferguson, 2003; Wilde, 2004). Linda van der Golff calls them the five mind-sets: “To be able to address the practice of management in a holistic way, five mindsets can be used, namely managing self, managing organisations, managing context, managing relationships, and managing change” (Golff, 2004:504).

Even so, education and labour market are not in harmony. What should change? How? One of the possibilities would be to support the natural activeness and enterprise of young people and start teaching business as early as in kindergartens. One issue is how an enterprising mindset should be shaped in teachers of pre-school and general education since academic results have thus far been seen as most important in the education system.

A third of Estonian schools have been teaching entrepreneurship studies in one form or another since 1992, mostly using a Junior Achievement programme, whilst only about a fifth teach entrepreneurship as a minor. Methodological courses for the programmes of the Junior Achievement Development Fund form part of teachers’ in-service training (www.ja.ee). Although student company fairs, conferences, competitions take place annually, not every interested student can attend. The Estonian education system however emphasises the achievement of academic qualifications whereas the labour market demands skills in creative thinking, initiative, cooperation and related competences.

Whilst universities in Estonia do not currently educate teachers of entrepreneurship, the draft development plan of the Ministry of Education and Research (MER) for 2006-2010 aims to develop entrepreneurship programmes in schools in cooperation with the Ministry of Economic Affairs and Communications.

An important question facing the country is how to implement entrepreneurship teaching in the general education system on a larger scale and thus promote enterprising behaviour. The first training course for Estonian teachers of entrepreneurship was launched by the Centre for Entrepreneurship at the University of Tartu as a pilot in January 2007 with 60 participants.

Entrepreneurship learning, basis of the training course

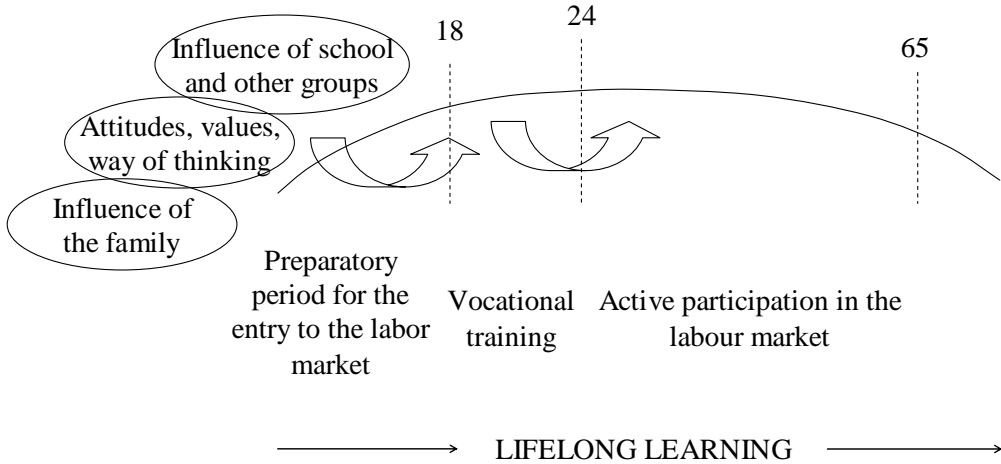
Whilst the elements of enterprise can be taught at an early age and even to pre-school children; knowledge and skills in business can be acquired later in life, too. In their life span, teachers influence thousands of young people in their most responsive age. The foundation for business-minded and enterprising behaviour and attitudes is laid before university starts. This can be seen in Figure 1.

More specifically, the partnership of student-teacher-parents is the most important in the development of an adult with all personal qualities. The importance of it was shown by Peter Coleman (Coleman, 1998; Torokoff, 2003).

The acquisition of the basic reading, calculating – is the first serious task. Other skills should also be learnt, such as communication, an ability to communicate novel ideas in a form acceptable to other people, an ability to listen, and an ability to respect other people’s opinions. An educational system

which judges people in terms of their skills demonstrated in fundamental subjects rather than in terms of their ability to study in the future, and cooperate constructively, should be considered irrational (Ferguson, 2003; Delors, 1999; Fischer *et al*, 1997; Kahn and Osha, 1997).

Figure 1: Life span from the aspect of economic activities



Source: compiled by Torokoff after Inglehart.

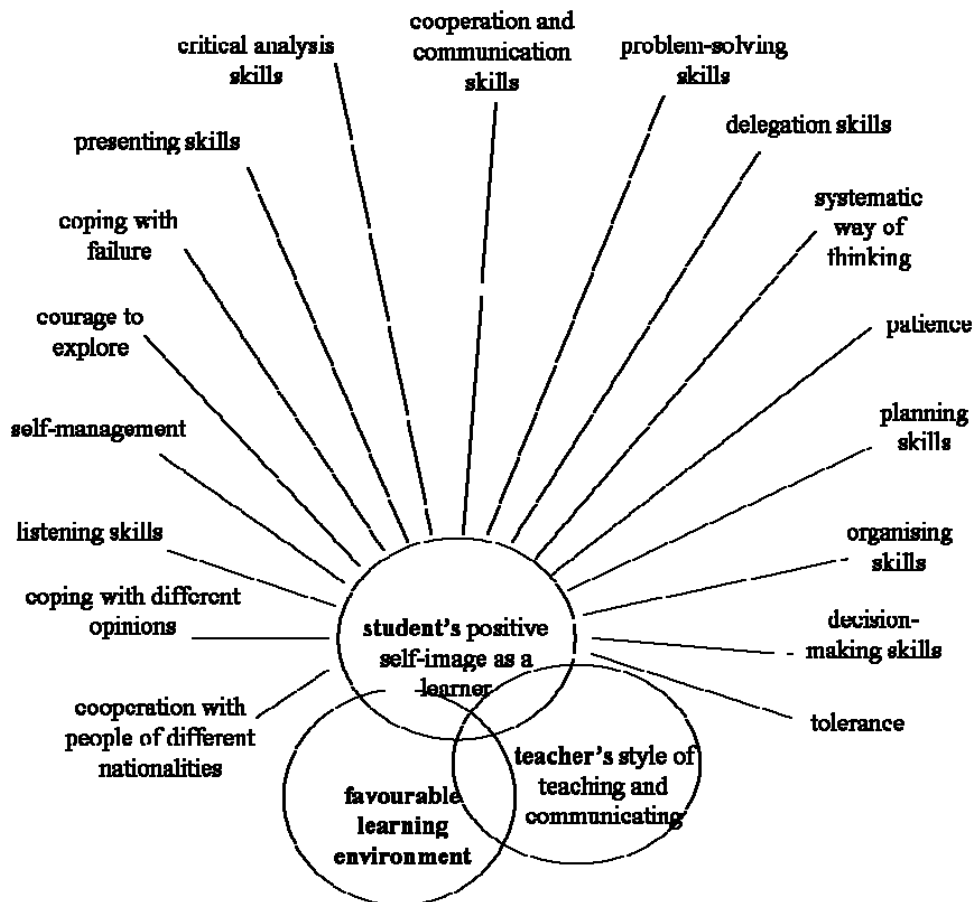
Many leading researchers and management consultants are convinced that our schools require a curriculum that considers both the process and the content. Balanced education must incorporate both acquisition and analysis of knowledge, and it should also include creative skills and tasks, an ability to take on and carry out tasks, and the ability to cope with everyday life when all these must be done together with other people (Wheatley, 1999; Wyckoff *et al*, 1997).

Teachers share values they value themselves. Whilst the letters of motivation showed that course participants mostly possess the necessary personal features required to teach entrepreneurship, they still wished to develop and learn. They appeared to lack skills for developing social skills and personal qualities in their students through general course work whilst providing a balance in academic studies (Torokoff and Mets 2005).

We intend to compile a portfolio of practical skills and teaching techniques and also to encourage participants to improve their professional skills that they might pass these on to their colleagues.

We shall apply a method which is useful to any entrepreneur, as well as any person who is able to cope with life (see Figure 2).

Figure 2: The primary factors which influence the student as a learner at comprehensive school and essential skills developed in enterprising people/future managers



Source: compiled by Torokoff after the model by Gibb, 2005; Sydänmaanlakka, 2002.

The entrepreneurship studies course aims not only to improve social competences and creative thinking but also includes a total of 30 topics; among them, for example:

1. The leader

- The concept, essence and importance of the leader in an organisation
- Why do we need leaders?
- How do you develop leaders in the course of studies?
- What are signs of success?

2. Coping with failure

- What is failure?
- Why do you need to know how to lose?
- How do you learn from failure?
- Analysis of underlying reasons
- Characteristics of success, etc.

The teacher's personality and teaching methods play the key role in training social competences needed for enterprise/entrepreneurship.

2. ENTEDU – the Estonian Case

Background

In Estonia, schools may use up to 3% of their budgets on in-service training, and Estonian teachers are highly interested in training opportunities. Entrepreneurship education is not currently included in the University Teacher Training Curricula and thus to fill the gap the Centre for Entrepreneurship of the University of Tartu developed the project ENTEDU (development of entrepreneurship education). The programme was also necessitated by a need to introduce changes in the education system which would support enterprise, teachers and their students as well as developing an enterprising attitude and mind-set.

A high student dropout rate has become an issue in Estonia. Schools are rated according to the exam results of their pupils, thus the primary focus is on development of academic abilities and study results, students who fail, leave for the labour market.

There is a link between quality of school work and quality of work in employment and school drop-outs may feel rather negative towards further studies. Frequent changes in the Ministry for Education have not helped to establish consistency in the policy.

The overall aim of the ENTEDU project is to develop competence in entrepreneurship education in order to provide support to the National Curriculum (draft) of the Ministry of Education and Research, where entrepreneurship is one of the underlying issues in the curriculum. It also aims to facilitate cooperation between the Ministry of Economic Affairs and Communications and the Ministry of Education and Research on the development of entrepreneurship education (The Development Plan for 2006-2010 of the Ministry of Education and Research).

The objectives of this project are:

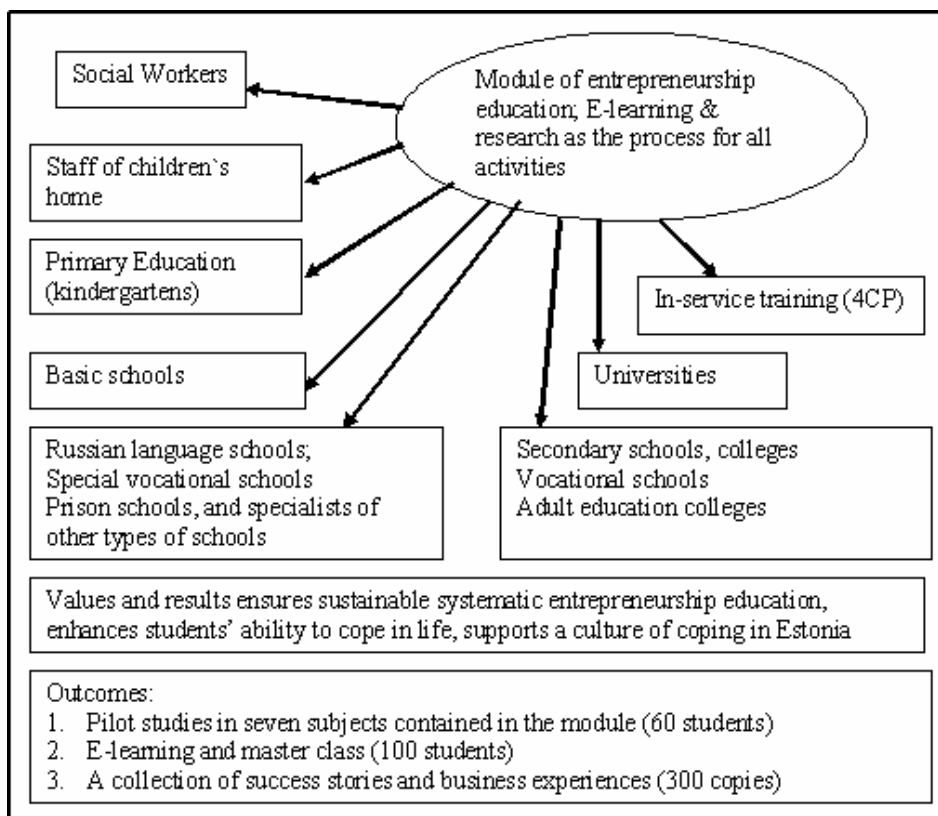
1. To prepare an entrepreneurship education module and methodological documents.
2. To link this entrepreneurship education module to the Entrepreneurship and Technology Management Master's programme.
3. To prepare high-level professional training and in-service training programmes in the field of entrepreneurship education which will be targeted at a wide spectrum of people.
4. To introduce the entrepreneurship module as an in-service training programme (volume 160 hours, worth 4 credit points).
5. To continue to develop mentoring for student firms working under the Junior Achievement scheme.
6. To lay a foundation for research into methods of entrepreneurship education with the aim of developing a methodology for assessing the results of training courses in entrepreneurship education.
7. To create an e-learning environment based on business centres, which will give access to the practical experience of and problems faced by various Estonian businesspeople, to analyse this experience and those problems, and to seek solutions and through these activities to better

understand the issues related to enterprise. The future e-learning environment will provide support for the master students of the entrepreneurship education module and participants in in-service training courses.

8. To lay the foundation for the skills required to teach entrepreneurship, that is social and creative thinking skills. Those are the skills which best allow us to improve the greatest shortcoming in our schools – the subject and grade-based teaching which has dominated until today.
9. To put together a collection of good practices on entrepreneurship and enterprise which will present inspiring case studies, and the recommendations and thoughts of entrepreneurs to the teachers of entrepreneurship. This could be used as a handbook in teaching as well as a practical guide for all people who lecture on entrepreneurship.

Accordingly (see also Figure 3), the project is targeted to (master) students for their second specialisation and to teachers-practitioners of preschool, general and vocational schools for continuing education. Special target groups are social pedagogues and specialists in social rehabilitation.

Figure 3: General framework and main target groups of ENTEDU



Source: Authors illustration.

The selection of these target groups (Figure 3) during the development of the entrepreneurship education field is essential to both the Estonian educational system and the Estonian society for the following reasons:

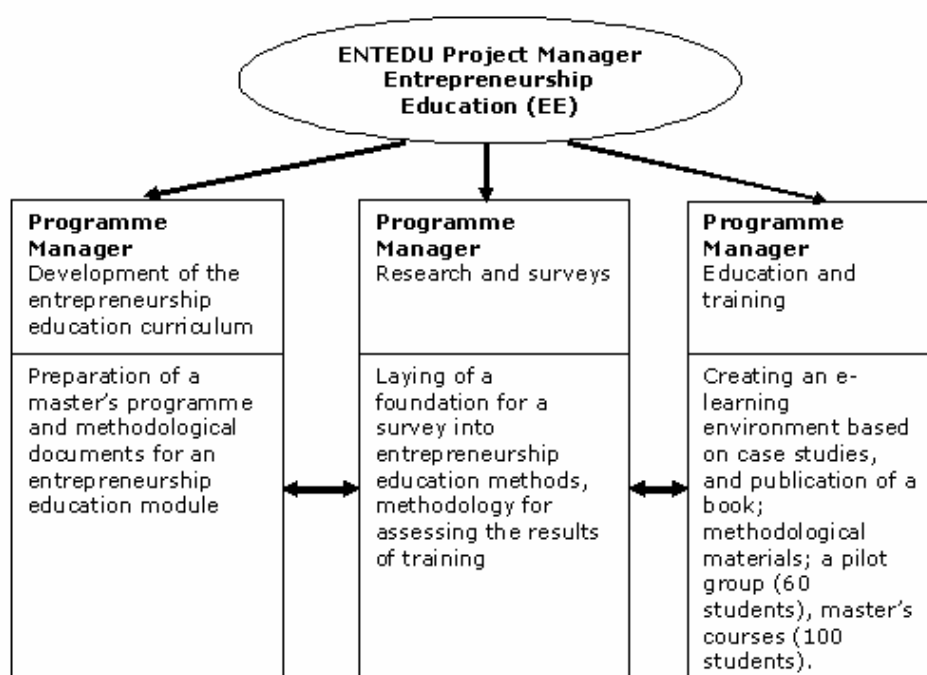
1. It offers a high-level systematic training in entrepreneurship education to a large target audience.

- It helps to develop an enterprising mindset and creative thinking skills (social competence) in educational institutions (immediate support for the Development Plan and the National Curriculum of the MER).

Indirect target groups of the project:

- Estonian companies – competent, creative and enterprising young people will enter the labour market
- The public sector – the project facilitates the achievement of several important strategic objectives, through the entrepreneurship education module support is given to a rise in the international competitiveness of the Estonian economy. The project allows enhancement of the work quality of the public sector and it improves the skills of public servants through in-service entrepreneurship training.
- Parents – through the students’ companies parents can be involved and develop their enterprising behaviour and an enterprising mindset.
- The whole society – through the encouragement of an active and enterprising way of enterprising behaving and thinking.

Figure 4: The general structure of the ENTEDU project management



Source: Authors illustration.

The introduction of the entrepreneurship education module allows systematic entrepreneurship education to begin, provides support for students’ ability to cope independently, and prevents them from falling into risk groups while also creating an e-learning environment. It will also allow to publish a book on enterprise and entrepreneurship as a collection of methods and good practices. This book will serve as both, a handbook in teaching and a manual in work later on. It will also allow us to

enhance the quality of teaching, to encourage students' wish to learn and to receive feedback (research).

There are plans to implement and further develop the Junior Achievement programme which has shown some very good results in Estonia. There are also plans to consider long-term good practices in entrepreneurship education from Germany, Switzerland, Finland and other countries, and to consider international research expertise and promote cooperation in this field (see also Figure 3).

The ENTEDU project is a part of the Entrepreneurship and Technology Management Master's Programme.

The need for this project:

1. The ENTEDU project is a follow-up to the INNOEDU project (03.10.2005-28.12.2007). While the INNOEDU project covers the field of innovation in terms of the vocational and higher education needs in Estonia, the ENTEDU project will develop a more general module in entrepreneurship education for teaching (or shaping) enterprise and entrepreneurship for the whole Estonian educational system. Within this framework the module can be applied in the master's programme of entrepreneurship and technology management as a study line for specialisation.
2. Despite achieving 5 per cent (Lepane and Kuum, 2004) TEA index¹ Estonians are not more entrepreneurial than their neighbours, Finns – 5 per cent, or Latvians – 6.6 per cent. The enterprise index, on the same level as in more developed countries (Finland, Denmark), is suggesting that as GDP increases, the level of enterprise in Estonian society declines (see U-shape phenomena in Minniti, Bygrave and Autio 2005).
3. The overall target of the national development strategy "Estonia's Success 2014" is to make the Estonian economy more dynamic and capital intensive, and to improve added value and focus more on nature preservation. To help achieve this objective, schools should support the development of a more enterprising, creative population with a better understanding of sustainability and sustainable life style.
4. The Estonian educational system is subject oriented and stresses the importance of grades. Thus the development of social competences is valued alongside the skills and abilities which are expected from those entering the current labour market (in accordance with the framework documents).
5. The Ministry of Education and Research plans to co-operate with the Ministry of Economic Affairs and Communications in developing entrepreneurship education. This is also a priority within the overall education system (in the Development Plan for general education). for 2006-2010), but training for entrepreneurship teachers is completely absent in Estonia.
6. With the application of the three sub-programmes of the ENTEDU project (see Fig. 2) support is given to teachers' professionalism, and also to the entrepreneurial attitudes of teachers as learners, their self-analysis skills, and their preparation for team work and to the synergies arising from them.
7. The module of entrepreneurship education, the e-learning environment, the "Book of good ideas for entrepreneurship teachers", and research and training courses will all improve the quality of education and reduce social problems.

¹ Number of people per 100 adults (between 18 and 64 years of age) who are trying to start their own business or are owners/managers in an active enterprise not older than 42 months.

8. The aim of the research group is to develop a methodology for delivery of entrepreneurship education in Estonia, including methods for assessing the outputs of this training. This will assist with evaluating the training programmes according to managing and supporting the application process during the development of innovative study programmes. In addition the methodology may also be of use in other educational institutions.

Implementation process for the ENTEDU project

Key Project Stages:

I Mapping

The survey of interest groups undertaken in 2003-2004 was repeated in 2007. The key issue related to what would be responded to change in schools and why, to help students become more competitive in the labour market.

In 2007, additional questions were added on the application of elements of enterprise education in general and vocational education, and on teachers' in-service training needs in enterprise education and the results were as follows:

1. We do not prepare our students for the labour market, it is the task of other schools – 42%
2. Good academic results in tests and exams are most important – 43%
3. When our students can enter universities, we consider our job well done – 20%
4. We do not know what the labour market needs, we have no relevant information – 36%

II Conference

On 17 April 2007 the Centre for Entrepreneurship arranged a conference “Enterprise training – challenge to Education” where the vision and programme of the ENTEDU project were presented. Outstanding Estonian managers were among speakers; an overview of the Junior Achievement programme over the past 15 years was given. The conference aimed to highlight the concept of enterprise education, why it is needed and to raise awareness of participants in the topic.

III Selection of participants for the pilot training programme

Whilst the number of places on the course was limited and organisers anticipated a high interest in a programme delivered free of charge, every applicant had to submit a letter of motivation. An additional selection criterion was to ensure attendance by teachers from as many different parts of the country and different types of school as possible.

IV Pilot training courses

These take place four times over the period of 12 months (June 2007-June 2008), including three 3-day courses and one 5-day course. 60 trainees are divided into 2 groups.

V Master class

(a 5-day course, will include 60 trainees and another 100 new participants, scheduled for June 2008).

VI Action research and learning-by-doing

The ENTEDU project provides support to the work of Enterprise Estonia through providing support in enterprise awareness and the promotion of enterprise education in schools.

University staff prepare new subject courses (3-4 members of staff form teams, specialists' expertise is used, working period is 6 months), and these courses are delivered within the pilot programme. The new programmes and study materials are analysed with the course participants and corrections are made where necessary.

We apply the concept of the learning organisation (Senge, 2007) which we call our “nesting tree model” since doing it allows each participant to:

- introduce organisational learning in their workplace in practice,
- to share knowledge and experience,
- to refine the vision and values,
- to improve personal skills through joint learning.

The needs and goals of participants were identified on the basis of their letters of motivation:

- To continue studies in the Master’s programme, enterprise education is an attractive field.
- To apply new skills in school for a better preparation of the children for life.
- Previous training courses have not included creative work and other social skills required in daily life.
- To improve professional educational skills.
- To set up a company.
- Lack of enterprise knowledge and skills and enterprise teaching.
- To provide additional value to my organisation through the application of knowledge obtained in the course.
- To prepare study materials for basic school students.
- A positive challenge in self-realisation and career.
- I gain additional value as an entrepreneur, manager and teacher.

The project organisers selected 60 teachers from different school types and schools, see Table 1.

Table 1: An overview of the participants

School type	Work experience in enterprise or working as an entrepreneur	Participants	
		Teacher	Manager / top specialist
Pre-school	5	5	2
Basic school	-	6	1
Secondary school	4	14	4
Distance education school	1	-	1
Vocational school	8*	15	
Children’s home	2	1	1
Special correctional school	2	4	1
Private school	1	1	1
Local municipality	1		3
Total	(21) 35 %	(46) 77%	(14) 23%

*Seven teachers of those who work in vocational schools also run a company

Source: Torokoff.

As the letters of motivation displayed, the group was highly motivated and has well-defined goals and needs. The participants' practical experience in enterprise is of great practical value and about a third of them can rely on these experiences.

What do participants expect?

- *Opportunities to voice personal opinions.*
- *To hear and exchange experience, learn from other people (to get feedback).*
- *Reflect on previous learning and new insights.*
- *New knowledge.*
- *Change to routine, fresh ideas.*
- *Communication, new friends.*
- *New ideas and didactic methods in practical work.*
- *Creating an enterprising community / a core group at work / friends and supporters.*
- *Course work might be more effective when participants do preparatory independent work, then meet in seminars and discuss various (problematic) issues, perform practical tasks (role plays, simulations, and the like)*
- *Lectures might be short, covering only principles and concepts to ensure common understanding*
- *In conclusion: Less lecturing and more practical learning*
- *We want to carry out our ideas!*
- *Lots of creativity and play in studies*
- *Participants' previous knowledge may be rather varied, thus perhaps it would be useful if participants prepared and presented theory in group work or brainstorming. Lecturers should then appreciate and acknowledge us and add some novel aspects and examples.*
- *Opportunities to voice personal opinions.*
- *To hear and exchange experience, learn from other people (to get feedback).*
- *Reflect on previous learning and new insights.*
- *New knowledge.*
- *Change to routine, fresh ideas.*

Source: Unchanged examples taken from participants' letters of motivation

Mapping of expectations improved the identification of our work group's principles and ideas on teaching. How did participants describe themselves?

In general, the 60 teachers described themselves as keen to learn, energetic, proactive, enterprising, with a large number of ideas and interests, responsible, purposeful, knowing the value of their time and intent on planning it carefully.

We found the above very positive and well linked with what other researchers identified: as a conclusion to their research, several scientists emphasised the provision of support for development, the enterprising approach of business people, and the importance of teaching enterprising behaviour for a person's quality of life on a broader scale (Kyrö 2005; Gibb 2005). Descriptions of an enterprising person are highly positive: "In general they support the notion of the active person, getting things done, thinking strategically on their feet and harnessing resources imaginatively" (Gibb 2005 p. 46). The scientists list these features as entrepreneurial behaviour, entrepreneurial attributes and entrepreneurial skills (Gibb 2005; Klapper 2005; Blicek 2005 *etc*).

Principles of teaching

The underlying basis for delivery of teaching in the ENTEDU project is the concept of the learning organisation, this is based on earlier surveys where both pupils and parents most frequently expect "... to have more teachers of talent and initiative in the school".

Each participant received a set of guidelines as follows:

"Motto of the ENTEDU project is:

"Don't walk behind me, I may not lead.

Don't walk in front of me, I may not follow.

Walk beside me that we may be as one."

A native American proverb

The teaching process is always a working co-operation between a teacher and a learner.

Here is a short guide to enable smooth cooperation which we shall amend together.

- Being positive underlies our work.
- "You have been given four things: Wisdom, knowledge, power and gift.
- You must honour these four blessings by having good thoughts, good words, and showing kindness to others."
- A native American proverb.
- In order to share knowledge and apply the concept of the learning organisation, we shall use the nesting tree model, participants select between 3 to 5 people of their choice (a colleague, pupil, parent, businessperson) for their "nest" with whom to regularly share knowledge and skills obtained in the course. Participants choose what to teach and how to teach.
- The result of the cooperation is a joint project report and participants can invite the members of their nest to the master class in June 2008.
- Goals and added value: 1) we learn best by teaching. 2) to apply principles of the learning organisation in practice, that is to be open to new ideas, to generate and disseminate knowledge, to come up with creative solutions together. 3) participants' colleagues will also implement elements of enterprise education and enterprise as a competence!
- We intend to carry our research within the ENTEDU project. One of the aims of the research is to evaluate short and long term impact made by the course on the participants. Results of the research will be used to improve the course, to use the best study materials and teaching methods for the development of competence in enterprise of the project target groups. Part of the pilot project is preparation of methodology for assessment of results of the courses which then could be applied for other training courses.

Please help us to achieve these aims and fill in the questionnaire. Conclusive reports will be made on the basis of the research results and teaching staff and participants of the course will receive regular feedback."

Work arrangements

Participants are divided into two groups: the group from North Estonia meets in Tallinn (our project partner is Tallinn University of Technology) and the group from South Estonia meets in Tartu (University of Tartu). Participants could choose between the meeting points.

An emotional bridge of community between the two groups developed following the first training session where participants were encouraged to get acquainted with each other quickly and reports of group work and greetings were passed between the groups via the programme manager. Each group also formed three sub-groups for the duration of studies.

Methods

Teaching staff use short lectures and other delivery methods as appropriate. The programme manager attends all training sessions as a lecturer and a mentor.

Our framework includes:

- the nesting tree
- group work
- practical tasks (business plan as a method of teaching enterprise/entrepreneurship)
- asking questions as a method of teaching and learning
- continuous self-analysis

Self-analysis

The compulsory task in self-analysis is the teachers' first step towards a change in teaching styles and views.

Self-analysis is based on Fred Luthans' theory (2002). His mission is to interpret theory in a way which is understood by practitioners; on the other hand, organisational behaviour takes on a rather critical tone and focuses on weaknesses of leaders and staff. It can be agreed with to an extent since research provokes some critical analysis of daily issues. However, it may seem pessimistic and withdraw practitioners from organisational behaviour theory. Teachers are also rather assessment focused because of their role.

Luthans' theory (Luthans, 2002) of positive organisational behaviour (POB) is a counterargument to the above. POB is positively orientated towards how to assess, develop and manage psychological features/characteristics of members of an organisation in order to improve their performance. POB involves a few areas described by an acronym CHOSE.

The model includes the following:

- C – confidence or belief in the ability to perform a task successfully in a certain context
- H – hope or faith that the person knows how to achieve targets and is motivated to attain them
- O – optimism is anticipation of a positive result and inclination to have a positive view and considering positive atmosphere and happy member of the organisation important equally to successful performance
- S – satisfaction or subjective well-being where members of the organisation feel they are happy in their lives
- E – emotional intelligence is an ability to recognise and manage one's own and other people's emotions.

The POB concept was developed within the so-called positive psychology which focuses on people's strengths. It provides ideas on how to manage people's behaviour in the organisation and is proactive rather than reactive (Luthans, 2002).

Participants' homework

Participants were given a preliminary task to carry out a self-observation and then write an essay "I, the Mentor". The essays will be exchanged between participants, analysed and each will receive feedback. The teaching staff will draw final conclusions. The research group will prepare a questionnaire for the evaluation and development of self-efficacy.

The method of asking questions

- Participants construct questions on the material covered after each training session.
- The group exchanges questions
- They ask and answer questions during the following training session.

Goals and added value of the method above:

- When people ask questions, they think.
- In order to formulate questions, they need to read carefully.
- In team learning they will see which items were considered important by other members of the group.
- It enhances critical thinking and analysis skills.
- Asking questions allows communication and immediate feedback.
- Listening to answers develops listening, attention, patience, tolerance and flexibility.

Team learning includes a task to compile these portfolios: Role play and social games for the enhancement of social skills (ages 3-99); Practical tasks for the enhancement of creativity; Philosophical fairy tales for making an impact on values and support enterprise.

3. Conclusion

There are a number of ways to train business teachers. Using the practices and experiences of other countries we paid attention to enterprising behaviour and mindset, and creative learning-focused methods.

On the basis of current experience with the pilot training course we can claim that results/level of teaching enterprise depend on methods and communication style selected by the teacher. Where there is will, there is capacity and necessity to do things.

The more different group members are, the richer the cooperation between them. If the used method involves learning-centred techniques, and issued tasks include cooperation and team learning, the added value is a new quality in teaching and synergy. Purposeful development and management of positive behaviour can yield better confidence and self-efficacy, hope, optimism, satisfaction and abilities to recognise and manage emotions of one's own and others. Participants were very interested in new practical games which develop social skills. They also quickly adopted the new method, or how to ask right questions, which is a method of creative learning.

Elements of entrepreneurship education can be implemented in any type of school and by any teacher, as long as teachers understand why it is needed, what to teach, and how to teach it, and learn to learn together, e.g. through the application of the nesting tree model.

Benefits and added value will multiply when we unite the concepts of positive behaviour and organisational learning and it will, in its turn, help to shape the enterprising way of thinking and related competences. Both learning and teaching are actively engaged and proactive behaviour is favoured. Professional skills of teachers will improve along with an increase in their self-confidence and dignity. Application of the above methods will create a balance between academic progress and social, emotional and creative intelligence.

Future research and development

The target group of this training project is teachers who potentially deliver entrepreneurship studies in schools. Thus it is important to identify their attitudes towards enterprise, to provide them with an overview of objectives of entrepreneurship education and equip them with new teaching methods.

Using the Haynie's questionnaire of adaptive cognition, it needs to be determined how well aware the participants are of themselves, how and to which extent they reflect, think strategically, plan and understand which skills and knowledge they need, and how they analyse and check their own activities (Haynie, *et al* 2004).

Conclusions of results and opportunities for the application of e-learning programmes can be drawn after the completion of the project. The project group will also prepare a questionnaire to measure self-efficacy along with assessment criteria.

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Science + Enterprising = Entrepreneurship

The Experience of the Manchester Science Enterprise Centre at the University of Manchester (UK)

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Abstract

The purpose of this paper is to shed light on the question: Can you really teach entrepreneurship? and How ? It is axiomatic that entrepreneurship is well embedded in the MBA curriculum, and longitudinal evidence suggests that graduates develop a pro-enterprising culture diachronically. Can we apply entrepreneurship education to scientists? The Manchester Science Enterprise Centre (MSEC), a partnership of the Manchester University and UMIST (now unified as the University of Manchester) was formed with funding from the Office of Science and Technology (OST) with the mission to engender a culture of enterprise in the science and engineering departments of Greater Manchester's universities (including the University of Liverpool). Its core aims were to deliver excellence in education as well as training and research in enterprise; and to create a flow of science based entrepreneurs capable of creating wealth at the forefront of technology. In summary, MSEC is the vehicle for raising enterprise awareness of technology transfer opportunities through appropriate science and technology departments across the partner universities. The jewel programme of MSEC has been the Master of Enterprise, which is on offer in co-operation with a number of link scientific departments (in 2002-03 there were 9 science departments) across the 4 Manchester Universities). The M.Ent. has been designed as a precursor to incubation. It allows young graduates, often supported by scientists, industrial sponsors and other stakeholders in the technology transfer sphere, to test and refine their innovative business ideas, whilst being educated and trained in the art of entrepreneurial venturing out. The outcome is a new cohort of entrepreneurial high technology postgraduates and a series of prospective new university spin out micro-business activities with growth potential.

This pioneering initiative epitomises how the university apparatus can be geared towards the engineering of new technology start-ups and knowledge transfer via the model: *Science+ Enterprise = Entrepreneurship*. In addition to the MEnt, there is also the Enterprise Doctorate, where the PhD scholars deliver a scientific thesis and a business plan, What are the lessons for the Entrepreneurship Education policy and practice?.

1. The MSEC Initiative

In the context of a fast evolving competitive market order, knowledge-intensive, high value added innovations are paramount to the building of national competitiveness. Politicians and industrialists have been calling for the support of high technology industries in their role as vehicles of technology transfer and facilitators of innovation throughout the economy (OECD, 1993). New high technology ventures have the potential to create sophisticated employment and wealth derived from high profit margins (The Commission on Public Policy and British Business, 1997, p.43). Moreover, high technology small firms act as a seedbed for totally new industrial activity (ACOST, 1990).

In line with the pro-high tech venture development policy framework, the Manchester Science Enterprise Centre (MSEC) was formed with funding from the Office of Science and Technology (OST) with the mission to engender a culture of enterprise in the science and engineering departments of Greater Manchester's universities (including the University of Liverpool). Its core aims are to deliver excellence in education, training and research in enterprise; and to create a flow of science based entrepreneurs capable of creating wealth at the forefront of technology. In summary, MSEC is the vehicle for raising enterprise awareness of technology transfer opportunities through appropriate science and technology departments across the partner universities.

Since 2000-01, the jewel programme of MSEC is the Masters of Enterprise, which is on offer in co-operation with a number of link scientific departments across science and engineering faculties of partner universities. The Masters of Enterprise has been designed as a precursor to incubation. It allows young graduates, often supported by scientists, industrial sponsors and other stakeholders in the technology transfer sphere, to test and refine their innovative business ideas, whilst being educated and trained in the art of entrepreneurial venturing out. The outcome is a new cohort of entrepreneurial high technology postgraduates and a series of prospective new university spin out micro-business activities with growth potential. This pioneering initiative epitomises how the university apparatus aims to promote technology and knowledge transfer via the engineering of new ventures through : *Science + Enterprise = Entrepreneurship* .

The MEnts apply science and enterprise knowledge and skills to a business idea with commercial value. This programme is unique and has attracted interest from prestigious institutions from around the globe.

2. The Rational for the Masters in Enterprise

Change is the only constant variable in the dynamic new economic order that businesses and universities operate in. A series of technological innovations are reshaping market frontiers. The ceaseless struggle for enterprise and government to improve industrial competitiveness generates the need for intensive and extensive technology transfer and the creation of innovative, world-class businesses. Certainly smaller enterprises (although resource poor) are proving to be more effective vehicles in the transfer of knowledge and creative technological innovations into the market place. However, the initiation and development of such growth inspired ventures requires

talented people with a unique pattern of skills. These skills combine technology know-how with enterprise management capability and business acumen. The Master of Enterprise degree programme has been designed to provide know-how, preparing people for careers as high technology entrepreneurs. The Masters Programme brings together the following three elements:

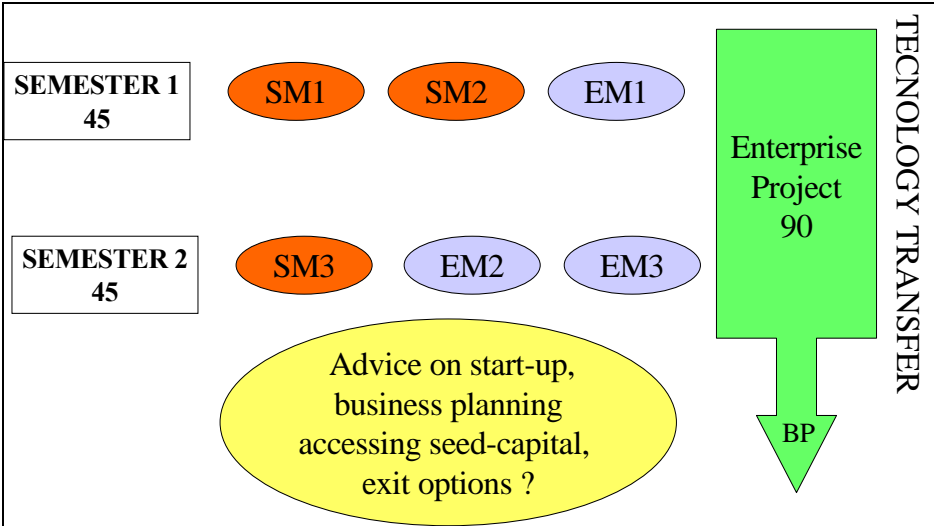
- Advancement of Knowledge – to extend the candidates understanding and knowledge in their chosen field of entrepreneurial endeavour.
- Enterprise Insight – to impart business, management and enterprise skills and understanding of the business processes applicable to the development of high technology enterprise.
- Best Practice – to expose candidates to the processes involved in starting up and running an entrepreneurial high technology business.

In the light of current developments under the new initiative of the Office of Science and Technology, the market niche for the MSEC-Masters in Enterprise programme includes:

- Young science graduates with potentially innovative product ideas whose aim is to set up their own business to exploit technology transfer .
- More mature scientist/science graduates with an in-company project ripe for commercial development/exploitation whose sponsors will influence the “intrapreneurial” direction of commercialisation processes.
- Entrepreneurially inspired young science graduates matched with a suitable external company or internal university project.

Figure 1 demonstrates schematically the original structure of the Master of Enterprise, which constitutes an educational alliance between the MSEC team (which involves technology transfer practitioners and enterprising academics) and science faculties, and it was initiated with the aim of fostering high-tech entrepreneurial start-up venturing.

Figure 1: The original Masters of Enterprise Model



Source: own illustration.

At the core of the one-year full-time Master of Enterprise (worth 180 credits) was the Enterprise Project (the science dissertation is worth 60 credits, whilst the business portfolio enterprise market research activities and reporting which culminates into a full business plan, carry the other 30 credits) which ran in parallel to the provision of three science modules (two in semester one and one in semester two), are normally offered by Link Science Departments (3x15=45 credits); three enterprise management modules (one in the first semester and two in the second) were offered at the Business Creation Unit of MSEC (3x15=45 credits).

The enterprise project had three generic phases, as follows:

- **Phase A** which considers the scientific idea and tentatively evaluates its prospects for commercialisation;
- **Phase B** which involves research and development laboratory work (mainly at the LSDs) and is dedicated to the validation/corroboration of the scientific concept and leads to the science dissertation; and
- **Phase C** which deals with the documentation of the Enterprise Project Report which also incorporates a business plan proposition directed to outsider investors, serial entrepreneurs and/or industrial sponsors, including the incubation house.

The outcome of the Integrated Science Dissertation - Enterprise Project is normally the development of a (preferably patentable) prototype of a high technology product or service with an identified customer base and a business plan outlining the way to the market. The most successful Enterprise Projects are expected to gain entrance to a business incubator supported by early investment. The Project brings together two complimentary streams of activities, that is technical R/D scientific investigation and business market research. The former involves research and development, performed in a research group in a conventional way, under the supervision of an academic staff member (an industrial business mentor is also advising the team), leading to the proof of concept and production of a prototype of the proposed product or service. This practical work is supported by taught courses selected from existing lists of postgraduate modules.

The compulsory enterprise stream normally comprises:

- MSEC 01- Understanding Enterprise (it offers an insight into entrepreneurship and innovation);
- MSEC 02- Mastering Business Foundation - the financial and business planning side; and
- MSEC 03 -Managing Enterprise (mastering growth and exit options) runs coincidentally with the science modules and guides the R/D-technological work so that it becomes the nucleus of a business plan proposition.

All business stream activities are carried out in the MSEC – Business Creation Unit - Enterprise Laboratory under the supervision of business mentors and enterprise academics whose efforts are supported by compulsory enterprise modules of lectures, workshops and case studies, all synchronized to the technology transfer developmental phases.

In recent years, the taught element has been reduced (by 30 credits , i.e. one scientific and one enterprise module) in order to give more credits to the early preliminary pre-start up business evaluation, scientific exploration and the series of meetings. In these meetings science advisors,

enterprise advisors, industrial mentors confer in a “board of directors” looking to map out strategic moves across the business life cycle of the student led venture.

3. Science Enterprise – Education and Policy Debate

In the light of the above review of the pre-incubation Master of Enterprise model a brief discussion follows that reflects certain technology transfer policy implications from the perspective of science enterprise education, scientist partners (academic, postgraduates) and/or owner-managers of innovating enterprises, and of course, state enterprise policy makers.

- *Intellectual Property*: How to manage IPR issues , as projects are often the ideas of science faculty , where they recruit charismatic students in order to ascertain the commercialisation potential of some of their concepts via the MSEC-M.Ent model.
- *Motivation*: What is the role of postgraduate researchers who play an active part in developing the project – what incentives (job, equity) in terms of remuneration and equity are needed to keep them on board after their graduation?
- *Micro-equity gaps*: How to secure seed capital for the pre-incubation phase of the initiative? How and when to engage business angels, VCs in order to inject capital in promising projects, which could graduate to the incubation house, science park of the University .
- How to broaden the technology transfer partnership teams; can MSEC incentivise more externally sponsored projects from SMEs?
- How can MSEC overcome the fact that the majority of science graduates tend to be young and often lack industrial experience and business networking; can MSEC via its scholarship scheme incentivize the enrolment of more mature scientists and graduates?
- *Curriculum versus Gestation*: The duration of the programme on a full-time basis is 12 months; this is not compatible with the gestation period governing the formation and early development of high tech ventures; Why not offer the part-time route for more experienced researchers who could enjoy more networking opportunities and surely prove more appealing to potential sponsors?
- *Academic assessment practise versus entrepreneurial synergetic teams*: How can MSEC address the issue that the great majority of projects do not involve a team of students (suffering from solo-entrepreneurship)? There is a set of academic regulations governing assessment of student assignments (on an individual and group basis) that we have to respect. This academic practice is in opposition to the expectations of external investors that often, in their search for sound investment opportunities, look for tested synergetic management teams with a balance of entrepreneurial and *techie* skills .
- *Outsourcing of MR*: Is there scope for certain projects to commission outsiders to undertake vital business research work? For example, a number of projects have projected their financial performance based on certain assumptions about price, sales volume, market niches – which have not be corroborated by primary market research. At some stage such simulations will be questioned by outside investors. Is there scope to employ teams of MBAs at Manchester Business School, where they operate project based marketing modules, to undertake consultancy

research on behalf of MSEC projects (at a certain rate of pay)? Is this acceptable in terms of academic practise ?

- *Interdisciplinarity* : How about mixing business and science students (graduates and doctorates, given the introduction of the Enterprise Doctorate Scheme) who may decide to enrol on open MSEC enterprising modules. Multitalented teams can execute module assignments that can generate better research reports and enlighten the technology transfer process. It is widely accepted that business students, involved in the traditional management programme usually have limited knowledge of the current emerging new technology or the technology transfer process; whilst the great majority of engineering and science students are typically not even introduced to basic business concepts of product commercialisation for the technologies that they are studying. Bringing together these two diverse groups of enterprising students could offer potential synergies that might foster effective high-tech entrepreneurship.
- How about a benchmarking exercise in order to review the technology transfer approach of other Science Enterprise Centres in the UK and other countries, so as to draw lessons from best practice that respect academic doctrines but also foster entrepreneurial venturing e.g. Business Idea Competitions, Business Plan Competitions, and Alumni Entrepreneurship Clubs.

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Entrepreneurial Learning in a Cross-Cultural Context Challenges Previous Learning Paradigms¹

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The tremendous increase in the number of entrepreneurship courses in universities has stimulated a pedagogical dialogue on entrepreneurial learning across cultures. The main argument generating this dialogue concerns the paradox between the traditional approaches to university teaching and the entrepreneurial qualities assumed to enhance an entrepreneurial mind-set and the requisite competencies. This chapter suggests that this paradox is not only due to differences in the learning paradigms, but also due to different concepts of education itself. In this paper attention is accordingly addressed to both of these with the aim of participating in and advancing this cross-cultural dialogue. First it focuses on educational concepts on both sides of the Atlantic, namely in continental and Anglo-American contexts. It then analyses different learning paradigms and their ability to enhance entrepreneurial qualities.

1. Need for Conceptual Understanding in Entrepreneurship Education²

The discussion between entrepreneurship and education has strengthened towards the end of the 20th century together with its tremendous increase in university studies on both sides of the Atlantic. As Menzies' (2004, 2005) studies indicate, in Canada the number of undergraduate entrepreneurship courses at universities has increased by 450 per cent in two decades. Vesper and Gartner's 1999 study found that the number of universities offering entrepreneurship courses in the USA had increased from 85 in the 1970's to 383 at the end of the 1990's. Wilson's article (2005) describes the same trend in Europe. Country-specific reports from France and Finland, for example, indicate in more detail a similar development (Fayolle, 2000; Paasio et. al. 2005; Römer-Paakkanen, 1999). There are, however, some differences between Canada and Europe in the latest reports. While Wilson anticipates a considerable increase in Europe, Menzies' study indicates a more mature state in course offerings in Canada, with only an eight per cent growth rate between 1999 to 2004.

What colleagues on both sides of the Atlantic share is the fact that business and/or technology as the scientific basis dominates university teaching in entrepreneurship education. The contribution of education as a science is marginal. A recent study reflecting this fact indicated that the confusion concern-

¹ Reprint of: Kyrö, P. (2005), 'Entrepreneurial learning in a cross-cultural context challenges previous learning paradigms', in P. Kyrö and C. Carrier, *The dynamics of learning entrepreneurship in a cross-cultural university context*, Entrepreneurship Education Series 2/2005, Hämeenlinna: University of Tampere, Research Centre for Vocational and Professional Education, pp. 68-102.

² I use the term "entrepreneurship education" as a general term while being aware that it is disputable. Alberti (1999) solved a similar terminological problem by applying the term "e-EDU" when defining it.

ing entrepreneurship education and its neighbouring concepts not only reflects the current state of research, but also the cultural differences in the meanings of basic educational concepts, such as pedagogy and didactics (Kyrö, 2005). This chapter carries this study somewhat further by arguing that the dialogue about entrepreneurial learning would benefit from a deeper understanding of the structure and dynamics of learning theories and paradigms. It thus aims to advance the discussion of the paradox between traditional university and entrepreneurial learning and teaching by providing more detailed bases for comparisons.

The need for this is apparent in the current pedagogical dialogue about entrepreneurial learning across cultures. The main argument generating this dialogue concerns the paradox between the traditional approaches to university teaching and the entrepreneurial qualities assumed to enhance an entrepreneurial mind-set and its associated competencies. Inspired by different authors, this paper continues the dialogue about this paradox, suggesting that to enhance cross-cultural understanding of entrepreneurial learning an understanding of the dynamics of conceptualisation itself is required.

As Richards (1995) expresses it:

Educational concepts make presuppositions about the nature of reality and that which constitutes legitimate academic study. To understand these educational concepts across different cultures requires more than a dictionary of educational terms. There needs to be a reaching out to participate in the international dialogue. By examining the differences in our basic concepts we can begin to ask what might be missing in our own perspective.

Furthermore, since most of the joint international discussion on entrepreneurship education takes place in the English language, the continental conceptual influence of education on this debate can be assumed to be minor. This challenges us to open up, not only the concepts as such, but also the differences in conceptual understanding, especially those relating to such concepts as pedagogy, didactics and learning paradigms, easily used without specific conceptual meaning. Reflecting these differences with respect to the ideas of entrepreneurship education might provide some new angle on the current dialogue. At the very least it might explicate some dimensions of the complexity of conceptualisation in the field of entrepreneurial learning.

Accordingly this chapter addresses its attention to both of these, with the aim of participating in and advancing this cross-cultural dialogue. First it focuses on educational conceptualisation on both sides of the Atlantic, namely in continental and Anglo-American contexts. It then analyses different learning paradigms and their ability to enhance entrepreneurial qualities.

2. Educational Concepts in a Cross-Cultural Context

2.1 Two Different Routes in Developing Educational Concepts

Entrepreneurship and education have their roots in the same holistic school of science.³ According to this, man must be educated to see nature as a complete, integrated and purposeful system with himself as an integral part of it. Furthermore, this non-dualistic approach made no difference between the body and the mind. (Bowen 1981, 339).

It should be noticed that in Western countries, education, as the right of all citizens, is a product of the modern transition. In the 17th and 18th centuries there was no formal education for ordinary people. For them, education meant life-long learning-by-doing in the context into which they were born. The essential idea of the Enlightenment was to create an educational system for all, not only for those of noble birth. However, not until in the 19th century, an educational system and the theoretical basis for learning were created.

The conceptual development of education, though, has a somewhat older history. The very first meaning of *Didaktik* was almost the same as the art of teaching or *Lehrkunst*. The idea of the founders of the German *Didaktik* (*didactica*), Wolfgang Ratke and Johan Amos Comenius (1592-1670), was to develop a general teaching method compared to the logical method, which at that time was thought to be the best way of presenting the teaching content in order to bring about learning. (Kansanen 1995). The position of *Didaktik* with regard to pedagogics (*Pädagogik*) changed during the next centuries. *Die Didaktik* was gradually brought into more general use alongside *die Pädagogik* or pedagogics, but its use was limited to German-speaking countries or to countries having cultural relations with Germany.

At the end of the 19th century, American educational research had many contacts with German research but this, however, was soon ruptured. Accordingly, conceptualisation took different routes, leading to quite different understandings of the basic concepts of education (Kansanen 1995).

This development took place in the context of the modern era that departed from nondualistic thought. Instead, as Bowen explains, the separation of man and nature as well as mind and body was accepted without critical analysis in the USA: ‘all the forces and bounties of nature are to be made serviceable to man’. These ideas became the cornerstones of the positivistic tradition of educational psychology in the USA. Education became known as the science of instruction with pedagogy as its technology.

Bowen (1981, 529) also describes how, in the era of scientific positivism, ‘the concept of education as an investment and human capital’ burgeoned in the early 1960s (Bowen 1981, 530-531). This period belongs to the larger modern era, in which entrepreneurship was marginalised, equilibrium theories dominated scientific debate on macro- as well as micro-theories and positivism as a scientific idol was worshipped on both sides of the Atlantic. During this era the contribution of Europe also diminished in entrepreneurship research and was dominated by that of the USA (Fayolle, Kyrö and Uljin 2005).

³ A rather more comprehensive description of these two different routes can be found in the article by Kyrö (2005).

The results of these developments are evident in the contemporary use of the concepts of pedagogy and didactics. Using Germany as an example, education has three basic problem areas, education in general, psychology and, thirdly, the sociology of education. General education consists of pedagogics and didactics (*Pädagogik und Didaktik*). Didactics is usually seen as a subdiscipline concentrating on questions of teaching (Röhrs, 1969).

In German literature, thus, *Didaktik* and educational psychology are clearly separate fields in education. The situation in Great Britain and the US is quite contrary (Kansanen 1995). Hamilton, (1999, 135) arrived at a similar conclusion in his article 'The Pedagogic Paradox - why no didactics in England'? He claims that due to an instructional turn the focus turned to teaching rather than learning. Consequently, the European discourse on didactics became very close to the Anglo-American discourse on pedagogics. Pedagogy, on the other hand, was sometimes taken as a synonym for the science of education (e.g. Moss, 2002).

Thus the concept of didactics disappeared in the American tradition. Nowadays 'didaktik' is in use in the Central European and Scandinavian countries, but is practically unknown in English or French-speaking countries. Having such different concepts of education, it is no wonder that entrepreneurship education meets challenges in developing its conceptualisation.

2.2 The Anglo-American and Continental Approaches to Education

The differences in educational concepts do not only concern the concepts themselves, but also provide different approaches to conceptualisation.

Kansanen (1995) claims that, by its nature, 'die Didaktik' in Germany has always been philosophical thinking, theorising, and the construction of theoretical models. The Scandinavian educational dialogue has also followed his approach. On the other hand, considering the situation in the USA, it has had quite a different approach. As Kansanen (1995) noted:

“ in British, as well as in American, educational literature, the sub-area of Didaktik seems to be lacking. Much of its content belongs to educational psychology. In the American literature of research on teaching, the problems of teaching and learning in general are usually held together without any theoretical model building. Attention is paid to the methodological problems... On the theoretical level, the development of theoretical models has concentrated on empirical research and on testing these in real situations.” (Kansanen 1995).

Explicating what these differences might imply requires going a bit deeper into the dynamics of philosophical thinking.

The concepts dealing with the philosophical basis are ontology, axiology and epistemology. Etymologically, 'logos' refers to 'explanation' or 'the word by which the inward thought is expressed, the inward thought itself' (Audi, 1995; McKechnie, 1977). In Greek philosophy, it took on the meaning of 'reason, thought of as constituting the controlling principle of the universe and as being manifested by speech' (McKechnie 1977). '-logy' refers to 'a specific kind of speaking like a doctrine, science, the-

ory of' (emt.); and 'onto-' in Greek means existence or being. Ontology originally referred to the branch of metaphysics dealing with the nature of being and reality (e.g., McKechnie 1977). In short, ontology refers to our ideas of reality and how it is constituted.

Epistemology, in turn, is interested in how we can acquire knowledge about this reality. The Greek word, 'episteme', refers to knowledge (e.g., McKechnie, 1977). Epistemologists try to identify the essential, defining components of knowledge (Audi, 1995). Thus, both of these provide bases for learning and teaching; they appear in learning theories and/or, what we understand by learning and teaching leads back to the ontological and epistemological assumptions.

In addition to ontology and epistemology, there is still the third concept of axiology that relates to value theories (Audi 1995, 830-831). It considers the values related to both ontology and epistemology. In its broad sense, in the context of ontology, it pursues the addressing of questions such as what is considered as valuable in our world and our existence in it. Further, in the context of epistemology, it addresses the question of what is valuable knowledge in that world and what kind of means are valued in order to gain that knowledge. Thus, it brings the moral aspect into scientific discourse. Explicit axiological discussion is quite unknown in the dialogue of entrepreneurship education. The situation is quite the opposite in educational discourses. For example Böhm (1995) points out that ethical questions are the very foundation of all educational discourses, be they theoretical or practical. Education is society's media for manifesting its ideas (i.e. Bowen, 1981). Thus the ideas adopted by educational systems adopt and reflect what society regards as valuable for its success and welfare.

Hence each learning theory involves society's ideas of the world, human beings, the ideas of knowledge it values, how this knowledge is supposed to be acquired, and finally to what kind of action it is supposed to lead. Consequently axiology and its interplay with both ontology and epistemology focus on the 'why' questions in learning, while the levels of pedagogy and didactics, deduced from the 'why' questions, then give answers as to what and how to learn and teach.

Combining the conceptual differences and their bases, it is now possible to elicit two different approaches for conceptualising in education. **The continental approach** thus starts by pondering ontological, axiological and epistemological questions, and then deduces learning theories from these bases. This is the foundation for learning and teaching, i.e., the pedagogy and didactics that emerges in learning and teaching practices. **The Anglo-American approach**, for its part, starts from practices, and then through pedagogy generates models for teaching and learning. The philosophical basis is more implicit in this approach. Thus, the points of departure, the focus and the direction in which to proceed are different in these traditions. Consequently, the Anglo-American approach puts more stress on the 'what' and 'how' questions, whereas the continental approach deduces its basis from the "why" questions. Figure 1 in 3.1 'What is a learning paradigm' summarises these findings as two different routes for the dynamics of educational conceptualisation.

These different routes suggest the question as to whether it is possible to advance the conceptual dialogue or dialogues unless we explicate our implicit assumptions underlying the elements of entrepreneurship education. It is easy to agree with Böhm's (1995) recommendation to return to philosophical questions in advancing educational discourse. On the other hand, this short overview also highlights the aspect that the question is not only about the concepts themselves but about the approach to con-

ceptualisation. The differences between these two routes might also give us some ideas for cross-cultural dialogue assuming that different countries have also adopted different routes for understanding what they mean by learning and teaching entrepreneurship.

3. Comparison of Different Learning Paradigms

3.1 What is a Learning Paradigm?

As a concept, ‘paradigm’ is an outcome of the intensified discourse of the dynamics of science that has intensified, especially in the latter decades of the 20th century. The tremendous growth of scientific knowledge has generated various different suggestions about its nature, its relationship to surrounding reality and, on the other hand, to propositions on how relevant and valid knowledge in general, is supposed to be acquired or created (Audi, 1995; Feyerabend, 1999, 1997; Kuhn, 1962; Popper, 1992/1959; Rorty, 1989). This search has also produced new concepts or conceptual units larger than a theory or a method, helping us to take into account, for example, the school system and structure and the time span of theory building. (e.g. Kuhn 1962, 247-248; Popper, 1992; Rorty, 1986). Paradigm and tradition, for example, are among the concepts generated for that purpose (Niiniluoto, 1984). The concept of methodology also relates to these efforts.

In order to study the nature of a paradigm, we can learn from this dynamic debate on the development of scientific inquiry that has basically “challenged ‘the empiricists’ view towards the theory change as an ongoing smooth and cumulative process in which empirical facts, discovered through observation or experimentation, forced revisions in our theories and thus added to our ever-increasing knowledge of the world. It was claimed that, combined with this process of revision, there existed a process of inter-theoretic reduction that enabled us to understand the macro in terms of micro, and that ultimately aimed at a unity of science”. (Audi, 1995) The paradigm discussion of entrepreneurship also seems to spring from this challenge.

Kuhn was the scientist who finally formulated the idea of a paradigm as well as the idea of the revolutionary development of paradigms. For Kuhn, the paradigm is a key component in the development of scientific knowledge. In his world-famous book, ‘The Structure of Scientific Revolution’, he argues that scientific work and thought are defined by paradigms consisting of formal theories, classic experiment and trusted methods. Paradigms are conceptual world-views. (Kuhn, 1992). Kuhn also formulated questions that should be asked, before science can be regarded as mature. According to him:

“Effective research scarcely begins before a scientific community thinks it has acquired firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions will legitimately be asked about such entities and what techniques employed in seeking solutions? At least in mature sciences, answers (or full substitutes for answers) to questions like these are firmly embedded in the educational initiation that prepares and licenses the student for professional practice.” (Kuhn 1996, 5).

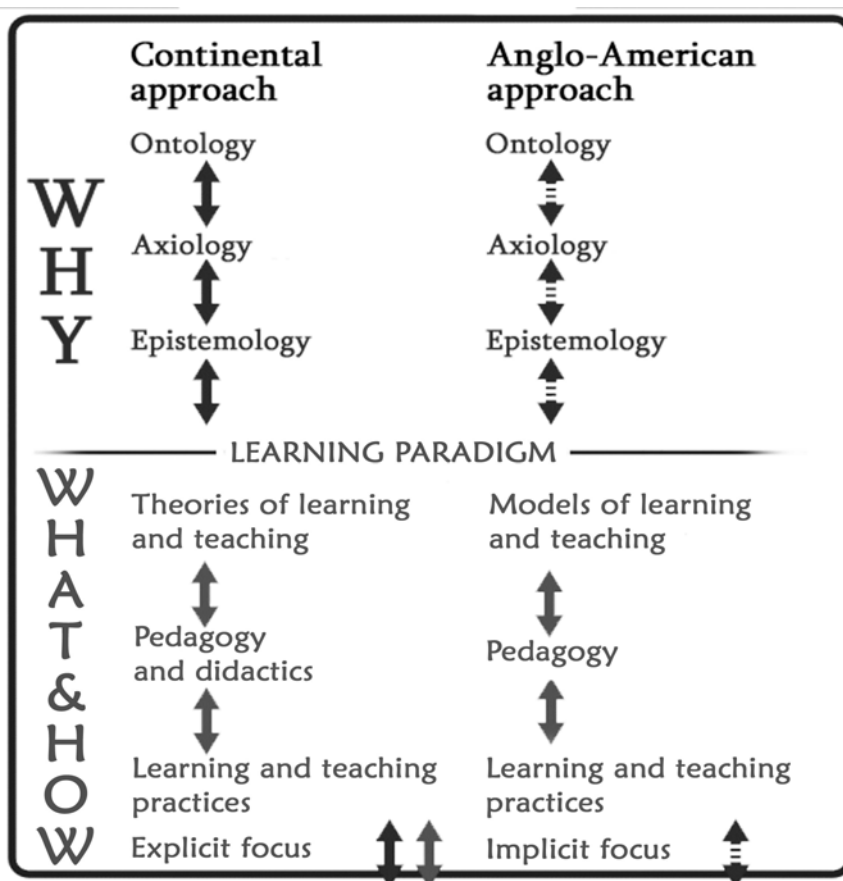
So, the core of a paradigm relates to the interplay between ontology, axiology and epistemology. As Niiniluoto suggested, it is a larger concept that seems to gather, on the one hand, the philosophical basis for the phenomenon or the field of science being studied.

Thus, the paradigm seems to play the role of a mediator between a philosophical basis and actual methods and individual theories. It contains the theoretical basis defining the very nature of a phenomenon and the rules to gain knowledge about that phenomenon. Thus, a paradigm is manifested as a group of theories and definitions suitable for describing the field of study, or in short the phenomenon and a group of methods, suitable for studying this field.

Following these ideas of the nature and role of a paradigm in the learning context, it is possible to argue that different learning theories are organised into paradigms that manifest society's ideas about learning, i.e., basically to the axiological questions relating to those ideas it believes are valuable for its success. It thus also contains the dialogue between ontology, axiology and epistemology. These refer to Kuhn's idea of conceptual world-views. In learning, Kuhn's idea of trusted methods refers to the levels of what and how to learn and teach, i.e., pedagogies and didactics. Finally classic experiment refers to learning and teaching practices, their processes and outcomes.

Comparing the continental and Anglo-American approaches to the dynamics of conceptualisation in education, it is now possible to compare the differences between both the conceptualisation processes and the actual concepts.

Figure 1: The Anglo-American and the continental approach to education



Source: own illustration.

In the Anglo-American approach the concepts of 'Models of learning and teaching' are thus parallel to 'theories of learning and teaching'. 'Pedagogy' contains both concepts 'Pedagogy and Didactics' in

the continental approach. At the paradigm level accordingly the concept of 'paradigm' consists of a group of learning and teaching models.

Even though this picture is obviously a very simplistic description of a complex conceptualisation process, it still gives some seeds for continuing and even perhaps advancing the cross-cultural dialogue.

3.2 Paradigm Discussion in Entrepreneurship

In entrepreneurship research the paradigm discussion follows Kuhn's ideas about the nature and role of a paradigm. It has mainly taken place in a methodological context (Bygrave, 1989; Davidsson, 2001; Grant and Perren, 2002; Hill and Wright, 2001; Stevenson and Harmeling, 1990). This paradigm discussion deals with many basic philosophical questions, from the actual worldview and human existence, to the nature and the concept of entrepreneurship and its demands on reasoning, and further to practical recommendations for advancing methodologies in this field. It thus follows the concept in the frame of reference presented in this chapter. In this debate worldview ideas that are put forward seem to vary in their philosophical stance from dualism to a non-dualistic position.

The questions the entrepreneurship paradigm debate ponders over concern the role and nature of human action: is there a special methodological base for studying this, and what is the relationship between an individual entrepreneur, a firm/business, the economy and the environment? Even though this conceptual discourse has not arrived at any definite answer, we can say that some philosophical agreement seems to prevail, e.g., that entrepreneurs are human actors, whose action relates to such phenomena as new venture creation, innovation, opportunity recognition and the exploitation of these opportunities. The paradigm discussion also often seems to take examples from the distinction between the natural sciences and social phenomena, as also Kuhn does. The focus is on pondering over the contradiction between stability and change and/or complexity.

Choi's dissertation (1993) 'Paradigms and conventions – Uncertainty, Decision-making and Entrepreneurship' introduces as a convenient concept a more extended meaning to paradigm. He uses it instead of 'ideas' or 'understandings', in order to describe what we use to reflect on our realities. According to him, it relates to all human action. People need paradigms to manage their lives. A paradigm always precedes action.

This kind of idea can already be found from the early contributors of entrepreneurship research, especially in Ludwig von Mises' writings on subjectivity. Mises called his approach praxeology, the science of human intentional action (Böhm-Bawerk, 1890-1891; Buchanan, 1982; Rizzo, 1982). Later, intentional action has been studied especially in the field of education, but neglected in the dialogue on entrepreneurship education.

At the beginning of the 21st century the field of entrepreneurship education has also seen joint dialogue on paradigms. Bhalla, Henderson and Watkins (2005) for example, analyse cases as learning contexts through two paradigmatic frameworks, that of Whittington and that of Burrell and Morgan. As an epis-

temological example one may take Alberti (1999), who considers knowledge creation to be at the core of his concept of entrepreneurship education.

Thus the chapter of B  chard and Gr  goire (2005) 'Understanding teaching models in entrepreneurship for higher education' in this book represents an exceptional Anglo-American effort to analyse and to explicate the ontological bases for entrepreneurial learning. Actually this Canadian example provides a good arena for testing the frame of reference for analysing the conceptual differences, since the concepts used in the chapter actually follow the Anglo-American approach.

These openings towards paradigm discussion in the field of entrepreneurship education hopefully turn out to be only the top of the iceberg in the future and to serve as appetizers for further research. What is obvious is that the distinction between traditional university teaching and entrepreneurial teaching and learning seems inadequate for specifying what is meant by entrepreneurial learning. Attempts to get a deeper understanding of this seem to reach their limits if we are not willing to learn from a paradigm discussion in education. I will focus on that next.

4. Three Different Learning Paradigms

4.1 Transitional Context for Learning Paradigms

Both learning paradigms and entrepreneurship research can be approached as cultural phenomena that have developed through transitions. Such transitions have taken place twice in the development of entrepreneurship, at times when ideas of freedom and the need for a new kind of reality have been especially essential for society's success. (e.g. Barreto, 1989; Casson, 1982; Wilken, 1979). The role of entrepreneurship relates to change in its broad sense from two perspectives: on the one hand it creates new practices, while on the other it breaks down old systems and institutions. Instead of being an evolutionary process, entrepreneurship can be regarded as a transitional phenomenon. These transitions also serve as a basis and environment for paradigm changes.

In transitions, different paradigms and suggestions for a paradigm can emerge at the same time, challenging each other and competing for a dominating position. Thus, this approach differs slightly from Kuhn's idea of the revolutionary development of scientific inquiry. It also questions or complements some aspects of the idea of a mature science and its relationship to the paradigm. It actually suggests that the paradigm is more a question of what takes place in the environment than inside the scientific community.

The first, the modern transition, took place at the beginning of industrialisation, from the 18th to the beginning of the 20th century, when the traditional era finished. The descriptions of entrepreneurship followed the industrialisation and liberalisation processes from country to country. Since these processes are country-specific, this transition as a whole was relatively long. Out of the modern transition developed the modern era, which, for its part, started to draw to its close in the 1970's, when the start of the post-modern transition occurred (Kyr  , 2000).

Both the economy and society were enlarging their organisations and becoming detached from individual, human behaviour. The need for growth as well as for institutional, collective and externally-

organised rules and norms started to replace and subordinate human choices and small-scale practices (Etzioni, 1968; Zuboff, 1988). When these ideals gained dominance, entrepreneurship was subordinated too, and lost its role as the main creator of economic progress, starting to refer to small business management and ownership. When the Western world met a decline in growth rates in the 1970's, followed by the appearance of notions of complexity and unpredictability, a new stream of discussions emerged (Piore and Sabell, 1984). There is much similarity between this discussion and that in France during the transition from traditional to modern. Again we are searching for new models for succeeding in new circumstances. In this post-modern transition, entrepreneurship has penetrated into, e.g., organisational and learning theories with its original features, aiming to renew practices and to break up old systems. (Gibb, 1993; Fiet, 1999; Petrin, 1991; Pinchot and Pinchot, 1996).

Even though education as the right of all citizens is a product of the Enlightenment and the modern transition following it, not until the modern era, a consensus about learning theories seemed to prevail, i.e., behaviourism started to dominate learning theories. This was followed by the cognitive paradigm and finally, in the post-modern transition, by the constructive paradigm and later also social-constructivism. Thus each of these has their own time and place in history. The continental approach to education offers a route to analyse the development of these three paradigms and then to study how they can fulfil the challenges of entrepreneurial learning. The analyses is summarised in Table 1.

4.2 Behaviourism, Cognitivism and Constructivism

Behaviourism - Empiricism and Order in Learning Theories

Behaviourism, based on empiricism, claims that sense impressions and observations are the criteria for truth and knowledge (e.g., Niiniluoto 1984, 140; Sarvimäki 1988, 16-19). The justification of knowledge in empiricism is provided by observations and deduced from them (e.g., Boyd 1991, 5). This could be called Aristotelian truth. From the two different ideas of the modern transition, the modern era started to follow that of the British, not only in economics, but also in learning and education. As the idea of the human being as the product of his upbringing and evolution achieved dominance, the human being was categorised and classified. Following the ideas of Charles Darwin (1809-1882), the human being became analogous to an animal.

Behaviourism recognised no difference between man and animal. The learner was regarded as an object that can be controlled. Learning could be seen as the sum of reactions – more reactions meant more learning. The knower in empiricism can thus be regarded as an externally-observed object, whose world is restricted to the observable world. Formal learning meant lectures in class-rooms and it could be investigated in laboratories. The teacher's role was to tell what and how to learn, as well as to ask questions and give the right answers to them.

These ideas are far from both the holistic school of the modern transition and praxeology's ideas of human intentional action.

The cognitive paradigm – Rationalism and knowledge in learning theories

During the modern era the ideas of organising and technical development also changed the idea of the human being. In the cognitive paradigm he was regarded as part of a machine or system (e.g. Bowen, 1981; Fiske and Taylor, 1984). This was followed by the notion that the world can be controlled and changed through order and technology. This was also applied to human beings and society (e.g., Etzioni, 1968; Halsey et al., 1997; Morgan, 1986; Zuboff, 1988). As Etzioni (1968) expressed it 'society produced individuals suitable for organisation'. The cognitive paradigm, following the ideas of rationalism, thinks that it is possible to accomplish true knowledge through intellectual intuition or reasoning. There exists an 'a priori' truth, which does not need empirical support (Niiniluoto, 1984; Sarvimäki, 1988).

The knower in rationalism is a rational isolated thinker. Whereas behaviourism thought that learning takes place outside the person, the cognitive idea placed it inside a person. Learning meant much memorising and later much information. The early cognitive ideas for their part regarded the learner as an information producer. Learning was seen as producing changes in the information structure. Analogies were sought either from EDP-machines or programmes.

The role of teachers was to tell what to know and what the right knowledge was, as well as to give as much organised information as possible.

Constructivism – bringing the human being and complexity into learning

In this transition, the cognitive paradigm first collects itself together and gains a position as a learning paradigm and then finds more complex forms. Competing efforts are seen in the formulation of humanistic ideas and, for example, andragogy for the specifics of adult learning. These, however, do not gain the status of a paradigm. Rather, they question the mechanistic ideas of the human being in other paradigms.

The latest paradigm, constructivism, both follows and, at the same time, questions cognitivism. Its main point is that information is not transferred, but that the individual him/herself constructs information. He/she chooses and interprets information, assimilates and accommodates it, constructing new knowledge based on previous experiences. This learning process is always situational, tied up with the culture the learner lives in and with. (Von Wright and Von Wright, 1998). The latest version also recognises that learning does not take place inside the individual but rather in interaction with other learners. Recently, this paradigm has also moved towards innovative and creative learning practices. Thus social constructivism has changed the role of the teacher, who is supposed to support the complex learning process, to create resources and a context for it. It has also changed the nature of learning.

4.3 Some Conclusions

Comparing the three paradigms leads to three essential conclusions:

1. Each of these paradigms represents different ontological, axiological and epistemological assumptions.

2. Consequently, all of them provide essentially different ideas of learning and teaching.
3. Finally, each of these paradigms has its time and perhaps its place, too.

These conclusions lead in consequence to several questions:

Bowen's idea that education is society's media for manifesting its ideas raises the question: why has it been so important to fundamentally change the idea of reality? (Bowen, 1981) This leads to axiological and ethical questions which have not been exposed in the contemporary dialogue concerning entrepreneurship education. This question of why entrepreneurship education is important for society and what kind of values it involves was, however, clearly in the arena during the modern transition.

The necessity for entrepreneurial practices has been argued from two complementary viewpoints. First it has been regarded as valuable for employment, revitalising and renewing local, regional and national economies, as well as renewing practices within organisations. Secondly, the European Union has linked it to democracy and active citizenship. These two motives were also the cornerstones for the entrepreneurship dialogue during the first, modern transition. The features of learning deduced from these values emphasise the learner's freedom and ability to create his/her own reality and to decide what is needed for that. From this perspective it is easy to argue that both paradigms of the modern era are quite contradictory. However, when it comes to constructivism this kind of difference is not so evident. Consequently, it is necessary to explicate what is meant by entrepreneurial qualities and compare them in more detail to these three paradigms. On the other hand, the combination of active citizenship and entrepreneurship requires that both of these concepts can be defined. In Finland for example, the whole educational system is assumed to apply both of them as a mainstreaming principle. Similar commitments can be found in other European Union member countries.

The second and third conclusions lead one to question: are teachers really explicitly aware of what kind of teaching and learning ideas they apply?

In this transition, as typical of transitions generally, the principles of all these three paradigms might emerge at the same time and receive different emphases in teaching practices (e.g. Sääntti and Kyrö, 2004). Since university teachers represent rather specifically scientific than educational competencies, most of their teaching practices are implicit, and might rely randomly on any of these paradigms, depending on the teacher's professional age and position within these paradigms. This kind of problem has not yet been studied in entrepreneurship education. Perhaps an even more interesting question is, if scientific inquiry as Kuhn's suggests, develops revolutionary, since the development of these paradigms in education does not confirm this assumption.

The third conclusion leads to the question how universal these paradigms are after all, since their differences have been analysed using the continental approach. Do these kinds of differences actually exist in other cultures? The Anglo-American approach might produce different outcomes.

Finally, the question why entrepreneurial qualities seem so strongly to resist efforts to apply them in a university context, suggests that there might be some fundamental differences between these learning paradigms and entrepreneurial qualities. Thus this analysis provides the basis for comparing how entrepreneurial learning challenges these previous paradigms. In order to study what might constitute the

difference when it comes to entrepreneurial learning and teaching, I will next follow the continental approach and analyse the basis and qualities of entrepreneurial learning.

5. What does Entrepreneurial Learning Add to Other Paradigms?

5.1 The Human Being and Action in Entrepreneurial Learning

By defining what is meant by entrepreneurial qualities, we can learn from the paradigm discussion that entrepreneurship mostly challenges dualism and focuses on complexity, i.e., how to act creatively and exploit opportunities in a complex and changing world. On the other hand, human action as the starting point for entrepreneurship has been focused on by most scientists since its early days (e.g. Barreto, 1989; Carland and Carland, 1991; Garrison, 1990; Von Mises, 1966).

In the modern transition, the early contributors on entrepreneurship focused on the right and ability of free human beings to create their own welfare and living. This was supposed to be achieved through creative human action by combining resources in a novel way, applying new knowledge and taking risks in this process. This was often described as a special kind of management and ownership combined together in the same entity. These early discussions were then addressed to different contexts. First, they were attached to the dynamics between an individual and society, then to small businesses and finally to larger organisations. (Kyrö, 2000). As a result, these practices broke old systems and hierarchies and created new practices. The qualities used in these early discussions have also been used in the contemporary debate on the definitions in entrepreneurship. They are gathered around such phenomena as opportunity recognition, new venture creation, growth, risk and acquisition and allocation of resources in order to make things happen (e.g. Brush, 1992; Carland and Carland, 1991; Davidsson, Delmar and Wiklund, 2000; Venkatamaran, 1997).

Consequently it is possible to argue that, in the current state of entrepreneurship, it exists in different forms or contexts referring to an individual, a business and an organisation. In the term 'organisation' we can include the whole of society. Thus, entrepreneurial activities can create different outcomes, i.e., enterprises, be they entrepreneurial individuals, businesses, micro-organisations or whole societies, but their qualities are the same independent of the context they are attached to.

This means that learning is at the same time individual and social, relating to the dynamics between individual and collective human processes. This questions the individualism often connected to entrepreneurship.

To define this kind of ontological basis requires, on one hand, taking as a point of departure human intentional action as providing reality and, on the other hand, assuming that reality changes as a consequence of this action. Thus defining reality as non-dualistic and complex is not enough for defining the basis for entrepreneurial learning. We can learn something about this from Ludwig von Mises' epistemological papers from the late 1920s drafting praxeology. He argued that economic science could not be verified or refuted through the analysis of observable data. Economics was an a priori science like mathematics, logic or geometry. Behind or as a point of departure for all of these was human action as the a priori assumption.

“Economics was increasingly coming under the sway of institutionalism, which denies economics altogether, and positivism, which sees no distinction between the social and physical sciences. Mises's answer was "praxeology," the science of human action, which sees each individual economic actor as having his own purposes and goals. ...Mises regarded positivism as especially dangerous. Not only was it scientifically invalid, but by treating people as inanimate objects to be manipulated at will, it gave would-be social engineers the perfect intellectual framework and justification for their activities” (Garrison, 1990).

Education participated in this non-dualistic opposition of behaviourism on both sides of the Atlantic. At the beginning of the 20th century, progressive movements both in Europe and the USA tried to find solutions to the unsolved problem of dualism. In Europe, perhaps the most prominent representative was Maria Montessori, who, influenced by Pestalozzi, Froebel and Rousseau, following the Holistic School of Science, created the child-centred pedagogy (Bowen 1995, 397-407).

In the USA, pragmatism represented the progressive movement, especially in the works of Charles S. Pierce (1839-1914), William James (1842-1910) and John Dewey (1859-1952). Their efforts were fundamentally different from their European counterparts in two respects. First, they were more influenced by British empiricism and Francis Bacon than by the continental Naturphilosophers and, second, they contradicted Plato's definition of knowledge as a well-justified true belief assuming that truth is stable, independent of time, be it based on empiricism or rationalism. Instead of defining the subject, content and object of knowledge as the elements of a process, they focused on the process itself. They strove to understand reality through action. For them, truth was an acquired quality. For Dewey (1951), it is something that is happening to an idea while verifying it, while for James (1913), it is the same as a process of verification. At that time pragmatism did not gain footing in the mainstream discussion, but was harshly criticised by behaviourists from two directions. On the one hand, it was regarded as too eclectic and, on the other hand, its idea of ‘usefulness as a criteria of truth’ was critiqued (e.g. Hilgard and Bower, 1966).

For pragmatists, knowledge is born and evaluated through and for action. What guides the action and evaluation is meanings and subjective interests. The problem with these ideas concerns other knowers. Not many ideas about that are to be found. Dewey (1951) saw man as a living being in interaction with the world. In the interaction process there is a confrontation with things. That is how meaning, emotions and interests are born. In this process, knowledge is created and tested by its consequences. We must assume that interaction with the world concerns other human beings as well. Meaning is like culture, at the same time collective and individual. From this perspective, knowing is also a social phenomenon. This means interaction with other people and we can learn it from the paradigm of social constructivism. In a changing reality we are facing the fact that what one is supposed to know and learn is changing, too⁴. In the complexity these changing factors are numerous. To choose what to focus on and consequently how to act depends, according to pragmatism, on our own interests. In entrepreneurial learning

⁴ In modern times these ideas were accompanied by stability. What was supposed to be true and known was stable, as was development towards it; both knower and known were regarded as stable. According to Niiniluoto (1984) ‘Truth and untruth are stable, characteristics independent of time... Pragmatists, however, consider truth as an acquired quality. According to Dewey, truth is something that is happening to an idea while verifying it. According to James, truth means ultimately the same as the process of verification’.

this means that learners are actors in this knowing and learning process, and that their interests guide the process.

These ontological and epistemological bases provide two basic elements in entrepreneurial learning: **first, an action-oriented holistic attitude towards a complex and changing world; secondly a holistic view of the human being, the learner and other learners.**

This also provides conditions for learning. It means that the learner should define the conditions for learning together perhaps with his/her co-learners. Moreover it assumes that instead of in classrooms learning takes place everywhere. This questions the role and nature of formal education as well as the role of the teacher in the learning process, and gives new meaning to the concept of an 'open learning environment'.

In detailed terms entrepreneurial learning involves the idea that the human being, looking around him and combining different elements, creates holistic realities, which have their consequences in action. Even when the environment is full of paradoxes and inconsistent events, the entrepreneur chooses those suitable for his ideas. He does not select his elements from a single environment; on the contrary, his ideas can spring upon him anywhere; by combining the different elements, he creates something new. As an example of this kind of action one may take Sarasvathy's (2001) concept of effectuation.

Even so, the role of the process referring to action, its nature and its dynamics, though being a part of **entrepreneurship education research**, varies considerably between studies. For example, in Gibb's earlier and later articles it is one of the guiding themes, whereas Alberti (1999) divides studies according to their focus into three categories: course contents and their appropriateness; to screening of possible course concepts and their usefulness; the efficiency of pedagogical techniques and learning environments. Scott, Rosa and Klandt (1998), on their own behalf, divide research on entrepreneurship education into three categories: education about, through and for enterprise. The action-bound ontological and epistemological bases suggest that entrepreneurial learning always involves the second category. Thus entrepreneurial learning contains learning from and/or for enterprise through the entrepreneurial learning process.

These perceptions of the central elements and their role in discourses of entrepreneurship and entrepreneurship education seem to indicate that, even though these might be included in the dialogue of entrepreneurial learning, they are not at its core.

Comparing this action-focused approach to previous paradigms shows that action has indeed not been at the core of these paradigms; it has even been contradictory to them.

5.3 The Nature of the Human Being in Entrepreneurial Learning

Going further, the entrepreneurial qualities themselves define what kind of human being is involved in entrepreneurial learning. One of the most challenging questions is how individual interests are born and developed. There seems to be a consensus regarding the role of opportunity recognition and its

exploitation in entrepreneurial processes. This challenges both behaviourism and the cognitive paradigm, but is in some respect regarded as an essential element in the most recent discussion of social constructivism (Von Wright, 1998). These issues are also studied in the context of creativity. However, as yet we know very little about the dynamics of these processes. Some elements of it may also be found from the paradigm discussion within the field of adult education (e.g Bron, 2005; Tuomisto, 2005)

What entrepreneurship has assumed since its early days is that this ability to recognise and exploit opportunities relates to **the human being as a unique, risk-taking, creative and innovative, free and responsible actor.**

Comparing these characteristics to the three existing paradigms, it is also easy to see that the human actor and his/her creative and innovative action as bringing about change and acting in a complex world has not been at the core of behaviourism or the cognitive paradigm. By contrast social constructivism does contain some ideas of that type. Thus a comparison of the three entrepreneurial learning principles in existing learning paradigms meets with some difficulties, even paradoxes.

The human being has been isolated as an object or a mechanistic knower, or as a constructor or social constructor of knowledge, rather than a feeling and creatively-acting entity. Constructivists have, however, exposed the uniqueness of the human being by presenting each individual as different, since he/she constructs knowledge according to his/her individual past.

On the other hand, the pragmatist Dewey, for example, explicitly regards emotions as an essential factor in learning. For him meaning, emotions and interests are born in a confrontation with things in the interaction process.

However, as recently as the 1980's, feelings were expressed very rarely in scientific writings. For example, Venkula (1994) searching through 235 000 scientific articles and publications, found only 50 mentions of feelings, and no mention of joy at all. In the field of education the Finnish professor Eero Ropo (1996), who studies the post-modern paradigm, uses the term media or channels to oneself. According to him, these are meta-cognitions, emotions, ethics and aesthetics. In the field of entrepreneurship education, Koironen and Ruohotie (2000) suggest that affection, conation and cognition are all essential aspects of entrepreneurial behaviour.

If we think of the creativeness involved in entrepreneurship, we soon notice that creative methods of learning have not been involved with previous paradigms of learning, but that they have started to interest scientists.

The problem, especially in a university context, is that we are supposed to compare and legitimate our knowledge with the past, with what has been known before (Lyotard, 1984). Creativeness, for its part, concerns something that does not yet exist, but needs to be invented. When circumstances change, this behaviour turns against us. Lyotard, for example, suggests that we should be more interested in inventing new games and rules, instead of verifying our knowledge against the past. The most exciting dilemma is thus how we can invent new things if we are supposed to justify our existence through the past. The tool for that in entrepreneurship has again been action. Instead of arguing, entrepreneurs

have put knowledge into practice. If they have not succeeded they have been responsible for the consequences. This is called risk. Risk-taking has probably received the least attention in learning theories so far. The question of how to learn to fail is rarely exposed in a learning context. However, failure and innovation relate to each other. If we want to create something new, risk is always present. Evaluating learning through success is thus contradictory to entrepreneurial learning. At least it assumes that the definition of success should be redefined.

Finally, there is a need to define what is, and what is meant by, a free actor. The simple idea of freedom is that a person has the right to choose how to act, what and how to learn, and more general by how to earn her/his living and how to think, as a holistic phenomenon. However, freedom is not only an individual concept as often understood in entrepreneurial literature, but rather concerns the whole learning situation and context. Thus defining one's own learning goals and the means to attain those goals are an essential part of entrepreneurial learning. The same learning methods and tools as used, for example, in business planning might provide quite different outcomes depending on the state of these basic elements of freedom. This is emphasised in Allan Gibb's (2005) chapter in this book. Leskinen's (1999) dissertation, for example, also brought up this fact. If these opportunities are not present in learning arrangements, the same learning activities produce quite different learning outcomes. This changes the role of the teacher compared to that in all previous learning paradigms.

5.4 Entrepreneurial Learning within Learning Paradigms

It is possible now to condense entrepreneurial learning into three principles, and, through the continental approach, to compile a comparison between entrepreneurial learning and other learning paradigms. This is summarised in Table 1.

The ontological and epistemological bases lead to the idea of human existence with three basic elements: **first a holistic attitude towards the world, second a holistic view of the human being and thirdly the human being as a unique, risk-taking, creative and innovative, free and responsible actor.** These three elements can be regarded as the principles guiding entrepreneurial learning.

Comparing these simple elements it is easy to see that entrepreneurship education can actually supply some added value to the existing paradigms. Whether it is a paradigm itself or rather focusing on neglected aspects of other paradigms is not so essential. What is essential, is to look at the axiological aspect and ask if these qualities and elements are valued enough to be included in teaching, be it at university or in some other context of our educational systems. If these are valued how can we create such learning opportunities and the support that enhances these meta-cognitive competences.

On both sides of the Atlantic, in the university context as well as through national curricula and political efforts, a search for solutions that focuses on these entrepreneurial bases appears to take place. This means that in the future the axiological aspects might also enter the educational dialogue about entrepreneurship.

Table 1: Entrepreneurial learning principles in different learning paradigms

Time	Beginning of the Modern era 18th century	Towards the end of the Modern era 20th century	Postmodern transition 1970's	Postmodern era?
ONTOLOGICAL BASIS IDEA OF THE WORLD and IDEA OF THE HUMAN BEING	Aristotle - empiricism The human being is an animal among other animals in hierarchical order: 1. White man 2. His wife and family 3. Other races 4. Monkeys World can be controlled through reason based on observations.	Plato - rationalism From animal to a machine or a part of a system. Man as an information producer and processor. Women as an equal workforce but not as valuable as men. World and nature are constructed through order and organising and they are controlled by technology.	Still rationalism but with some questions Challenges the cognitive paradigm and its idea of the human being. Human being is more complicated and so is the environment. Truth is also something person experiences. World is polarised and complex, not linear, there are different truths. Woman as a human being among other human beings.	Pragmatism - world is made Holistic approach to world and the human being. Uniqueness as a universal feature in human being. He/she is feeling entity and social actor with other human beings. He/she is an extraordinary, risk-taking, creative, free and responsible actor. Truth changes according to action.
Axiology	?	?	?	?
EPISTEMOLOGICAL BASIS IDEA OF KNOWLEDGE	Knowledge is based on sense impressions and reached through observations. It increases linearly and is diversified. It is evaluated through quantitative measures.	Knowledge is accomplished through reasoning and memorising. It is still diversified and delivered as pieces isolated from the environment.	Individual him/herself constructs knowledge based on his/her past experiences; later also other people are involved in this process (social dimension).	Knowledge is created through action and interaction with others. Knowledge changes.
LEARNING PARADIGMS	BEHAVIOURISM	COGNITIVE PARADIGM	CONSTRUCTIVISM, LATER SOCIAL CONSTRUCTIVISM	EXPECTATION FOR A NEW EMERGING POST-MODERN OR ENTREPRENEURIAL PARADIGM
PEDAGOGY - WHERE AND HOW TO LEARN	Learner is the object of indoctrination and control. Learning is the sum of reactions. Take place in classrooms. Can be studied in laboratories	Learning takes place inside a person first through memorising, then by giving much organised information. Learning treated as changes in information structure. Analogies to an EDP machine or programme.	Learning is an individual and social phenomenon. It is not dependent on place and time. Individual her/himself is in centre of learning, deciding where and how to learn.	Learning as a complex and diverse process dependent on action taking place everywhere.
DIDACTICS - HOW TO ACT AND HOW TO TEACH	Teacher tells what to do and how to do it, teacher gives questions and right answers for them.	Teacher tells what to know and what is right knowledge. Teacher gives much organised knowledge.	Teacher supports learning and creates resources and contexts for that.	Surrounding people and a person her/himself create possibilities for learning. Person her/himself decides how to learn and how to act. Teacher provides freedom and opportunities for students and enhances their creativity.

Source: own illustration.

6. Conclusions and Some Expectations for the Future

At the beginning it was suggested that the paradox existing between the traditional approach to university teaching and the entrepreneurial qualities for enhancing an entrepreneurial mind-set and competencies is not only due to the differences in learning paradigms, but also due to different concepts of education itself.

Accordingly, the analysis of these educational concepts introduced two different approaches to conceptualising educational concepts, the continental and the Anglo-American approaches. These different routes introduced a need to explicate educational concepts and approaches to conceptualisation, especially in any cross-cultural dialogue about entrepreneurship education.

Applying the continental approach, the chapter then analysed different learning paradigms and their ability to accommodate entrepreneurial qualities. This conceptual analysis indicated that entrepreneurial qualities might indeed provide some added value to the learning paradigm dialogue. This was specified as a comparison of the ontological, epistemological and theoretical levels in order to advance cross-cultural applications within the field of entrepreneurial learning.

These are very preliminary thoughts, however, and many of their aspects are arguable and await for further theoretical and empirical research in order to obtain deeper insights into the learning processes. The dynamics of entrepreneurial processes in learning, especially in innovativeness, freedom and risk-taking, seem fruitful fields of research.

The cultural differences in educational concepts invite us to study whether similar differences occur in the literature of entrepreneurship education. Such a study would contribute to both fields of science, entrepreneurship and education. Assuming that conceptual differences also occur in learning practices, this would also have practical implications.

Combining the philosophical bases of conceptualisation brings up the question of whether it is possible to move forward in the conceptual debate or debates unless we explicate our implicit assumptions underlying the concepts. It might also contain the seeds for reuniting the Anglo-American and the continental conceptual debates on education.

Hopefully the reader will find some leads for reflecting why entrepreneurial qualities seem to conflict so strongly with efforts to apply them in a university context; this reflection might then help in efforts to employ these qualities in teaching.

The history of education indicates how important cross-cultural interaction between researchers is. We can learn from history that when the human links between researchers have been broken, scientific discussions have also ceased. Thus Richard's words quoted at the beginning of this chapter are indeed timely: we do need international dialogue, and by examining the differences in our basic concepts we can begin to ask what might be missing from our own perspective.

I quote Grant and Perren's (2002, 185) suggestion:

whether a Hegelian or Kuhnian perspective on knowledge production is taken, it is clear that the health and future development of research in this area requires a broadening of perspectives to enable debate, friction, creativity and ultimately new theories and understanding.

My sincere hope is that this dialogue contains explicit axiological reflection, since I feel that otherwise we may lose the very nature of both educational discourse and entrepreneurship.

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Entrepreneurial University as Challenge: Scientist and Commercialization

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“Knowledge has to flow from those who know things to those who make things. There are many forms these flows can take, from the lectures, philosophical societies, and encyclopaedias of the eighteenth century to the community colleges and internet of the twenty-first. But the institutions that facilitate these flows have to exist” (J. Mokyr, *The Gifts of Athena, historical origins of the knowledge economy*, 2002).

In academia there exist at least two worlds: the world of science and the world of the commercialization of science (“technology transfer”). The two worlds co-exist and although there is interaction between the two worlds, there is not so much cross-border traffic. It is as if the world of science and its quest for fundamental understanding and the world of commercialization and its constant search for opportunities are on different planets in different universes. Each world requires its specific competences and a better understanding of what goes on, could contribute to solve the so-called *knowledge paradox*.

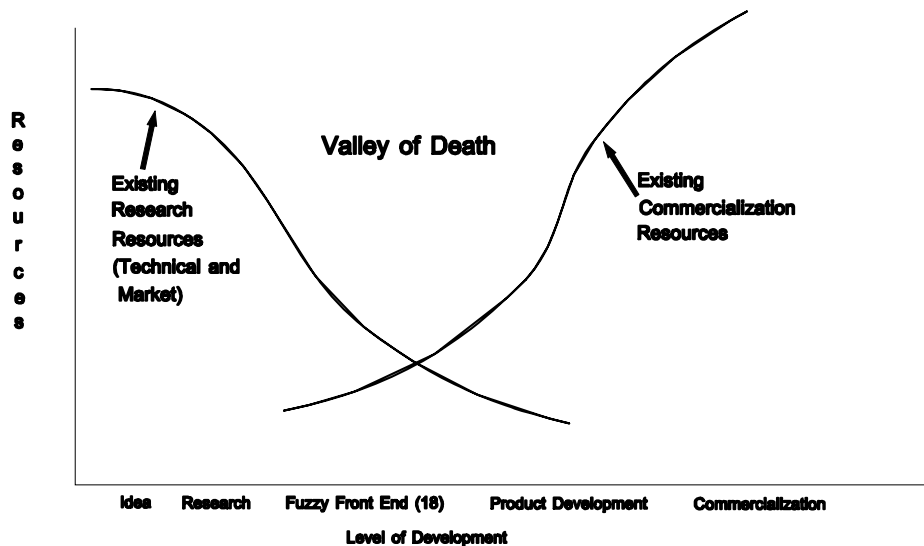
1. The Knowledge Paradox and the Valley of Death

“Voyages of discovery, driven by curiosity, have created many new opportunities. Similarly, curiosity-driven research leads us to new business and trade, and therefore new prosperity. There need not necessarily be a gap between researchers and entrepreneurs! As you are well aware there are currently two points of view on public-private interaction. The first is that our excellent research is too far removed from practical applications: this is the European paradox. The second opinion is that good basic research can be jeopardised by placing too much emphasis on concrete applications and economic gain” (Dutch Minister of Education, Culture & Research, her Excellency Ms. Maria van der Hoeven at the closing ceremony of the high level EU Presidency Conference ‘Investing in research and innovation: realising the potential of public-private interaction’ on 13 October 2004, Noordwijk, NL).

Comparing the United States and Europe, it can be concluded that both entities are good in the production of knowledge (journal publications and/or books). The United States, however, are better in the transformation of knowledge into products – European research is too far removed from practical applications; research does not cross the so-called valley of death (see Figure 1). The Valley of Death is, according to Markham (2002), the gap between the recognition of an idea (and the subsequent research – often financed through public resources) and the efforts to commercialize it (and bringing in private sources of money). In our (European) society there is (enough?) money available from public sources (national governments and the European Union) for the more fundamental oriented research (pre-competitive) up to the point that the research is becoming commercially interesting (e.g. up till the moment that a prototype on a laboratory scale is available). At that moment, or even before that moment, private companies and investors should step in and develop the prototype into a sellable product. Traditionally scientists are not interested in the commercialization, but more and more scien-

tists are becoming interested for a diversity of reasons. Two reasons will be highlighted: (1) the nature of research, and (2) the nature of the innovation process.

Figure 1: Valley of death

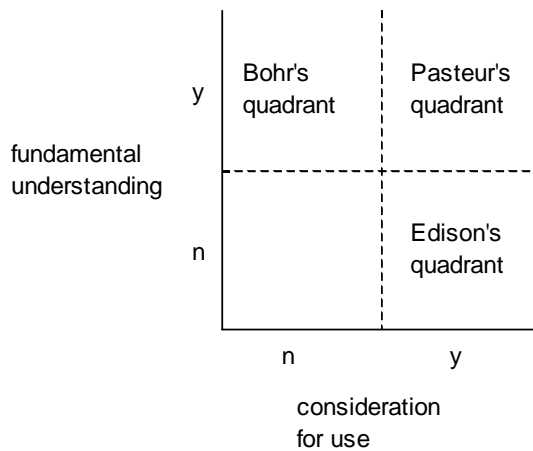


Source: Markham, 2002.

1.1 The Nature of Research

Research can be divided in many different types. Already mentioned is precompetitive research that implies competitive research, fundamental and applied research and there are many other distinctions possible. Stokes (1997) mapped research on two dimensions: First, the dimension of the “quest for fundamental understanding”, and second, the “consideration for use”. The two dimensions combined gives a quadrant model of, as he calls it, scientific research (see Figure 2). The top left-hand quadrant is called after Niels Bohr, the scientist who explored the atom model, which at the time had no practical use. The lower-right hand quadrant is called after Edison – the inventor behind the electric lighting; his goal was to come up with a commercially profitable solution. The top-right hand quadrant is called after Pasteur who combined both approaches: a fundamental understanding of the phenomena that had major societal impact. The concern that good basic research is jeopardized by placing too much emphasis on its application (see quote of the Dutch Minister) is superfluous for research in this quadrant. The fourth quadrant, which has no name, could be called “curiosity”: a research that has not been designed to gain fundamental understanding nor has any practical use. As an example Stokes mentions “Peterson’s guide to the birds of North America”. All four types of research exist and can, at some stage, cross to the next quadrant. For example, Bohr’s atomic theory at the time was only driven by a quest for fundamental understanding, but in due time it could be put to use and solve practical problems.

Figure 2: Classification of research according to Stokes (1997)



Source: Stokes, 1997.

This crossing of cells could be characterized with a saying attributed to Kurt Lewin, “nothing is so practical as a good theory”. Also Edison’s inventions could in due time, be placed in and explained by scientific theories (as they are nowadays). Nevertheless, an ideal situation is the fundamental understanding of a practical situation that leads to a solution rooted in a (new) scientific theory. In today’s knowledge society, there definitely is a preference for Pasteur’s quadrant type of research – or to phrase it differently, research that takes its practical use (also) in consideration and turns it into business Stokes’ quadrants distinguish clearly between basic and applied sciences – in theory.

But, how about the day-to-day practice of a scientist or a researcher? Publishing the research results in the top journals, isn’t this what every scientist wants? There is a small but growing number of scientists that has broadened their interest beyond this into marketable products (Etzkowitz, 2002). And this is the challenge for the scientific community: how to do research that meets the academic as well as the market standards – Pasteur’s approach .

1.2 The Nature of Innovation

The knowledge-driven economy affects the innovation process and the approach to innovation. The traditional idea that innovation is based upon research (technology-push theory) and interaction between firms and other actors is replaced by the current social network theory of innovation, where knowledge plays a crucial role in fostering innovation. (EU, DG-enterprise, Innovation Management and the Knowledge-driven Economy , 2004).

Innovation is used in many contexts and for many purposes. Boer and During (2001) distinguish between “product innovation”, technological innovation”, “organizational innovation” and “market innovation”. In all types of innovation “knowledge” is important, but in the framework of this Chapter, innovation refers to “technological innovation” – the production of knowledge into technology. Broadly speaking two types of innovation are possible: incremental innovation – a step-by-step continuous innovative process, and disruptive innovation – a new process that cannot be transferred to or into existing processes and/or products. The science areas studied at a university develop technologies that lead (more often than not) to disruptive innovations; since every step in the process of bringing

this technology to the market is new, it requires scientists to be involved beyond the phases they normally investigate.

1.3 The Scientist's Challenge

The choice of a scientist was to do research and his choice to do this in a university setting. This implies that, the decision was made with view to doing more fundamentally oriented research and to compete in the international area for publications in highly respected journals. To be involved in activities beyond mere research is not a choice, but a challenge: how to do research that has practical implications and use. As a consequence, scientists need to engage themselves in other types of research (e.g. Pasteur's quadrant type of research), make that engagement till the commercial exploitation in the market and get new ideas for research in the interaction with the market. This is a scientist's challenge.

2. The Context of Research: the Entrepreneurial University

The context in which a scientists work varies; even at a university. The context where a scientist is most likely to engage in "application oriented" research is the entrepreneurial university. Davies in 1987 already described the characteristics of this type of university. Based on study visits to universities in the USA he identified the following factors that led to the evolution and development of 'entrepreneurial and adaptive universities':

- The first factor he identified is *demographic trends*: universities have to adapt to the needs of other types of students than just the ordinary full-time students. Universities e.g. have to deal with part-time students and older students.
- The second factor is a *financial turndown*: tighter budget processes, fewer government funds, etc.
- The third factor is the *relation with industry*: in general this means the breakdown of the 'ivory tower' in favour of relations and interaction with industry. Davies especially mentions here the 'recognition by universities of the need to play a helpful role in the regional economic development and the provision of an integrated university support for the community, especially where that community is under stress" (Davies, 1987, p. 19).
- The fourth factor is a *severe competitive market*: a severe competition between universities, competition with the non-education sector for students, and competition for research funds.
- The last factor distinguished by Davies is *internal considerations*: the realization that there should be a good and effective as well as an efficient organization.

An entrepreneurial university, according to Davis, is a university that competes in a severe market for students (as a result of demographic changes) and research funds (as a result of financial turndowns). To have success it should have a good internal (management) structure, good external relations with industry. Clark (1998) identifies five characteristics of entrepreneurial universities:

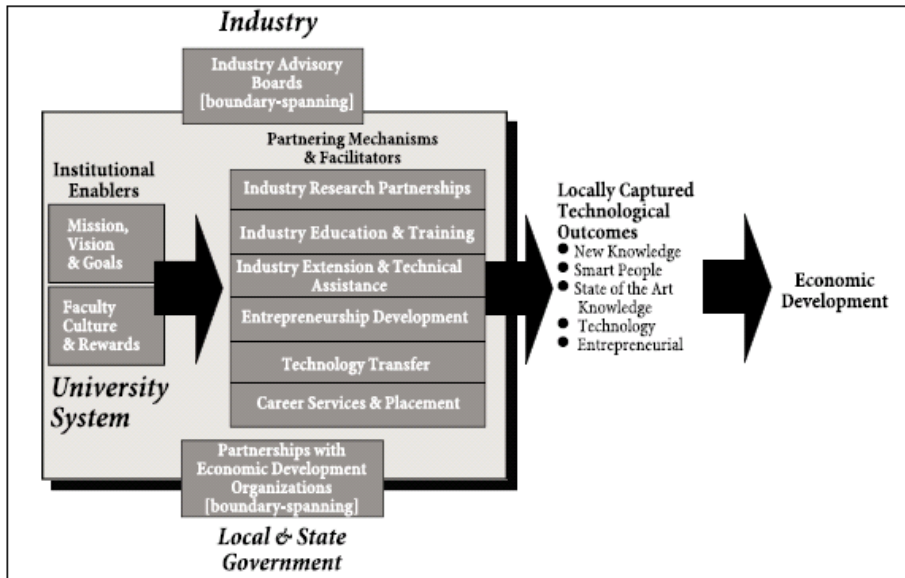
- A *strengthened steering core*; this characteristic concerns the internal organization of a university (and its strategy); as such it relates to Davies' factor 'internal considerations'.

- An *expanded developmental periphery*; this characteristic is about the way a university interacts with its environment through what kind of organizational unit (technology transfer office that manages the interface between the university and the “outside world” – e.g. Goddard, 1999) and through what kinds of means and programmes. This factor is related with Davies’ factor ‘relation with industry’.
- A *diversified funding base*. An entrepreneurial university should depend not only on government funds, but also on other types of funds, e.g. from industry and the European Union (Framework Programmes). There is a relationship between this characteristic and what Davies calls ‘financial turndown’.
- A *stimulated academic heartland*. A university should have a backbone in (inter-, multidisciplinary) research as strong as possible. This type of research transcends the traditional domains and is (also) of interest to industry. As such Davies does not explicitly mention this characteristic as a factor.
- A *new institutional ideal*. In an entrepreneurial university there ought to be an atmosphere of entrepreneurship and innovation in all the layers of the organization.

In comparison to Davis, Clark adds two important new characteristics: the stimulated academic heartland and the integrated entrepreneurial attitude of the organisation. Maybe Clark labeled with his characteristic “stimulated academic heartland” the most important characteristic: research in an entrepreneurial university is inter- and multidisciplinary and it should move beyond the disciplinary borders – just as the reality of innovation in industry. To be of interest for industry a university must carry out research that is of interest for industry. University management should facilitate and support (e.g. via the establishment of specialist offices such as a technology transfer office) this and as a result, in due time, new (more?) resources become available for the university. The ultimate result is that the climate in the university changes into an entrepreneurial one.

For some universities this involvement with industry is not a new function; for many it is and that is why governments stimulate the cooperation between the two types of organisations. In fact, a three party cooperation comes into existence: university, industry, and government (“triple helix”; Etzkowitz, 2002, and Thomas, 2000). The objective of such cooperation is “wealth creation” and “the improvement of the quality of life” (Thomas, 2000), or as phrased by Tornatzky *et al* (2002) for economic development (see Figure 3). This trend not only indicates that universities change, but also that their role in the innovation system is changing, assuming the development is sustainable over time. Many recent publications illustrate that this is important. Tornatzky *et al* (2002) combine most of the above-mentioned ideas into a (new) model for universities: “Innovation U.”. In this model the three important actors (university, industry, and government,) together produce locally “captured technological outcomes” that result in economic development.

Figure 3: Innovation U. model



Source: Toamatzky et.al, 2002

The output of the “triple helix” cooperation is:

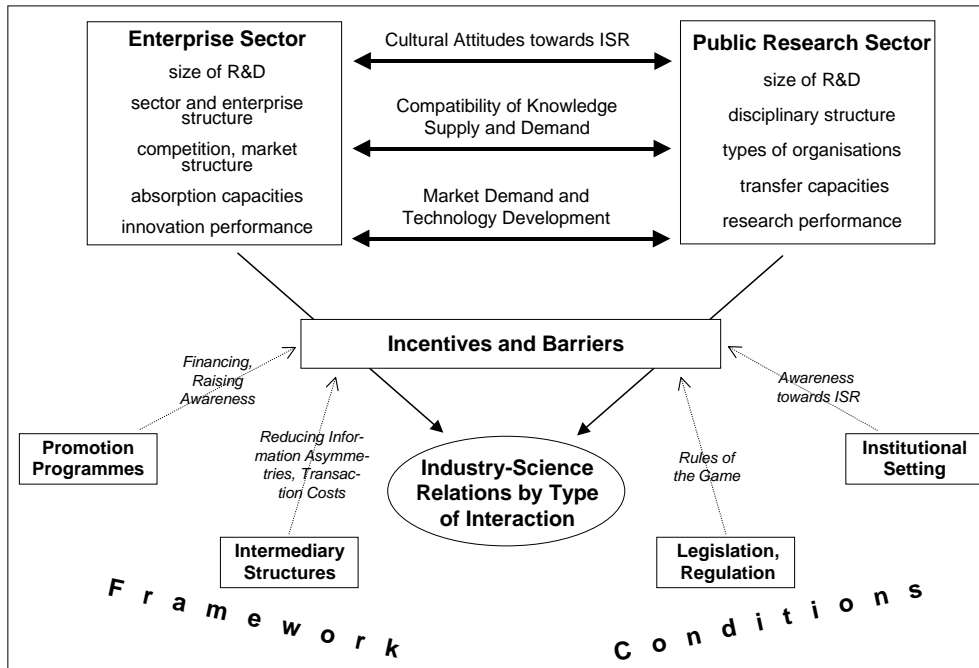
- *New knowledge*: knowledge can be created in three different contexts, Mode 1, Mode 2 (Gibbons et al, 1994) and Mode 1.5 (Huff, 2000). New knowledge also is created in the context of its application via new combinations, sharing and cooperation (“knowledge circulation” could be a term for this new type of “knowledge production”, see e.g. Van der Sijde, 2005)
- *Smart people* or improved “human capital”: students from the university are involved (via the “partnering” mechanisms) with (regional) industry and learn the necessary competencies in the professional context of the company. Students also bring their knowledge and skills to the company that benefits (Van der Sijde & Ridder, 2005). The university staff involved in the supervision of the students also learns from the interaction with the students and the company.
- *State-of-the-art knowledge* and *technology*: As Schmidt (1997) mentions one of the barriers for innovation in SMEs is the access to knowledge. In the cooperation with a university (via government stimulation programmes) SMEs not only gain access, they become partners in the development of new, state-of-the-art knowledge and technological development.
- *Entrepreneurship*: A spin-off interaction between university and industry could be an opportunity that is better to pursue a new venture created by a student, a scientist or an employee from the industrial company.

The impact becomes visible in the economic development of the region (or city) via the aforementioned outputs of the “triple helix” cooperation. New companies are created (“entrepreneurship” combined with “smart people”), “technology” and “new knowledge” contribute to the regional (or local) innovation (system) and when combined with entrepreneurship it could mean the stimulation and implementation of knowledge intensive or high-tech companies.

2.1 The Clash of Cultures?

Theory always looks different from reality: a university differs from a company in many ways. A study on industry-science relations (Benchmark, 2001) outlines the compatibility and non-compatibility of the two different types of organisations (see Figure 4).

Figure 4: A conceptual model for analysing industry-science relations



Source: Benchmarking Industry-Science Relations – the role of framework conditions. Report commissioned by EU, DG Enterprise and Federal Ministry of Economy and Labour, Austria)

The barriers for a flawless interaction between the systems are:

- Different attitudes with regard to the interaction: universities and companies are differently organised; whereas in a company a clear chain of “command” exist, this obviously lacks in a university. Scientists are far more autonomous than (scientific) employees in a company; also in the interaction with industry.
- Compatibility of knowledge supply and demand: the challenge to do research that fits into Pasteur’s quadrant is here the issue. Knowledge of both types of organizations is necessary – but the compatibility always is the issue.
- Market demands and technology development: a university has a different time frame than a company. Universities prefer to think in project of (at least) 4 years (or even longer), companies also have to think about “time to market”; the longer the time to market, the longer it takes to reach the break-even point.

As conceptualised in Figure 1 there are mechanisms to bridge the research community (universities, public sector research establishments) and the enterprise or industry sector and the primary driver of these mechanisms is the government.

The benchmark study highlights the role of the framework conditions (the role of the government – see Figure 4), especially regarding:

- Legislation, regulation
- Intermediary structures
- Promotion of programmes
- Institutional settings

The framework conditions both facilitate and hamper the interaction between academia and the world of business; nevertheless, interaction is necessary.

2.2 The Necessity for Cooperation Between Academia and Industry

Universities have lost their prerogative on the creation of knowledge and industry also creates knowledge (Mode 2 type of knowledge). Further, innovation in industry is becoming more open – “open innovation” as coined by Chesbrough (2003, 2004). One of the basic ideas behind “open innovation” is that industry is using not only its own resources, but also other parties’ resources and realising that not all knowledge has to be in-house. Universities could be such a party. Universities have to find (new) sources for financing research (see also the section about the entrepreneurial university) – industry is a source to turn to. Both academia and industry have their own motives for cooperating together.

3. The Routes of Commercializing Academic Research

The shape that commercialization takes at universities vary and depends on the policy decisions made. Nevertheless, some broad and general mechanisms can be identified and a first important decision that needs to be made is whether to commercialize alone or with/via others. The first choice leads to the creation of *spin-offs*, the second to *sales* (patent/license, contract research) and/or *cooperation* (collaborative research, partnerships, strategic alliances) with existing companies and/or institutions (see e.g. Capart & MacDonald, 2004; Grant *et al.*, 1996).

3.1 The Scientist’s Choice

The scientist working in a university context faces two possible scenarios for the commercialisation of his research (Derksen, 2000):

- Scenario 1: The scientist becomes entrepreneur. In many countries around the globe the intellectual property (IP) coming from research belongs to the university (the employer of the scientist) and the scientist ought to seek permission to exploit the IP via his own enterprise.
- Scenario 2: The university that owns the IP of the research results commercializes the IP via its own mechanisms. The scientist plays an important role in this process, because he is the person to first identify the commercial potential of the research.

In both scenarios the scientist plays a crucial role. His most important role is that of a “scout”; he identifies a potential application for the outcomes of his research – in other words, he scouts the idea. His second role is to find ways to explore whether the idea is a business opportunity; something he can do himself (in view of him becoming an entrepreneur) or bring it to the attention of business developers

at the university (e.g. the technology transfer office). The further role of the scientist depends on his and the university's choice; nevertheless, it requires the scientist to have basic knowledge of the commercialization process. But ... there is a third scenario in which the scientist also "stars": making (graduate and post-graduate) students enthusiastic for entrepreneurship (e.g. Ridder & Van der Sijde, 2003). Also this scenario requires the scientist to have some basic knowledge of entrepreneurship.

3.2 The Training of Scientists

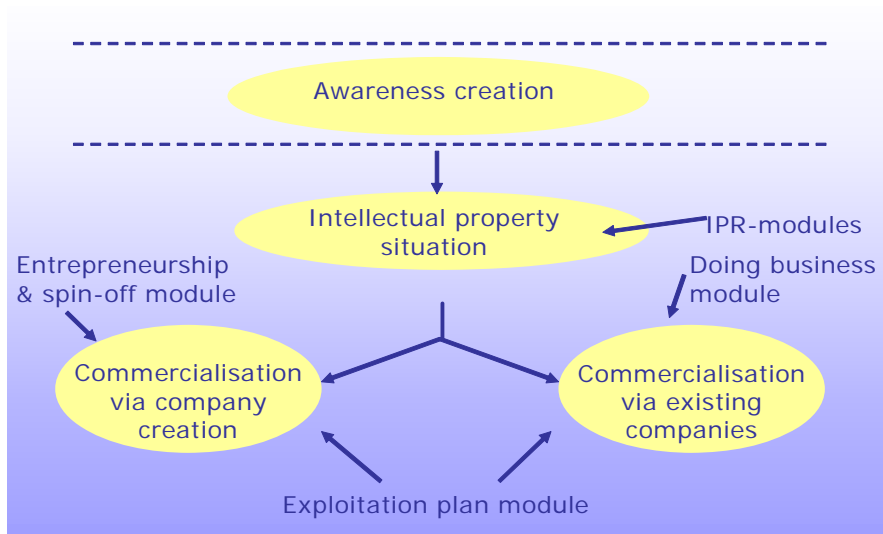
The development of training for scientist was the primary objective of the project Spinnova (EU Paxis project). Based on discussions with relevant stakeholders a training course was developed with the central theme "the creation of awareness of the commercial potential of the results of the research".

The topics selected for the training course are (see also Figure 5):

- *Intellectual property rights*: What is intellectual property, how can you protect intellectual property, who owns the intellectual property, how to obtain and maintain the intellectual property rights. In Europe there are differences between the single countries: in some countries the person who carried out the research owns the intellectual property, in other countries it is the university who owns it. Topics like these are important for a scientist to know, to be aware of the commercial potential of his/her research and to avoid conflicts and freedom to operate.
- *Doing business with (existing) companies*: There are two basic routes for the commercialization of the results of research. One of these routes is via an existing company. A scientist should be aware of the why and when a company is interested in what kind of research results. It is important that there are good/proper agreements between the university and the industry (company) in which the interests of both parties are respected. Another issue is how to assure fair returns for the investments made by the university.
- *Creation of a spin-off company*: The other route for commercialization is to set up a company to exploit the research results. A scientist should be aware of what it takes to set up a company.
- *Marketing and communication*: Whatever the form of commercialization marketing and communication are basic skills. Furthermore a scientist should have a basic notion of what this involves especially in the field of high tech.
- *Exploitation plan development*: The basis for all entrepreneurial activities is an exploitation plan that indicates what activities are necessary, why and how, who could be interested and how to get into contact with them.

Each profession has its own competencies: the scientist has different competencies from the entrepreneur. Sometimes the scientist wants to become an entrepreneur – in that case he needs to build up a team of advisors and co-entrepreneurs; more often, the scientist wants to remain scientist and either hands over the business opportunity to a professional or to a colleague or a student who wants to become an entrepreneur. Important is, that the right resources and competencies are brought into the venture creation – competencies and skills that go beyond those of a scientist, but he has to find out how to access those.

Figure 5: Structure of the Spinnova training course



Source: Van der Sijde & Cuyvers, 2003.

4. Concluding Remarks

Science and commerce are two worlds. Each world has its own characteristics and peculiarities. Both worlds are also changing in conjunction with each other and university and industry are “forced” (by the innovation system) to work together to create wealth and enhance the quality of life. Working together does not mean that universities “sell out” to industry (or vice versa), but cooperation should be based on the merits of both types of organizations. Working together should have an added value for both parties – commercialization does have this added value.

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Preserving the Entrepreneurial Disequilibrium Role

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Abstract

The paper highlights the key entrepreneurial role of being a panacea for companies and societies alike to cope with structural change and transition situations to its capacity to capitalise on market disequilibria. The paper provides a wide-ranging interdisciplinary literature review and summarizes a variety of empirical cross-cultural qualitative and quantitative research of the author in the field. The findings imply that entrepreneurs face an application gap of the disequilibrium role in situations, where they are confronted with, sometimes radically, new value systems, i.e. when internationalising, cross-culturally co-operating with partners or in transition countries. As this would have very detrimental consequences, not only for the entrepreneurs but also for the economic and social well being of the respective societies, the paper outlines key aspects of a possible research methodology and invites for co-operative research activities in the field.

1. Introduction: Entrepreneurship - A Beacon in Dark Economic Moments

The arousal of the interest for entrepreneurship as a panacea for structural crises of large and small companies in the late 1970s and early 1980s (Klapper, 2004) as well as for restructuring transition economies in Central and Eastern Europe (i.e. Kaufmann, 1994; 1997; 2000; 2007; Sanchez Bengoa et al, 2007) reflects its major inherent property: Entrepreneurship is a valid concept to affirmatively cope with transitional situations. Entrepreneurship is a proven concept to bring about change (Morrison, 2000) in the individual, the institution, organization and society by contributing to overcome inertia, paralysis or stagnation (Boyett, 1997). The author holds that it even needs situations of uncertainty and disequilibria to flourish. Exemplarily, enterprise creation has been regarded vital for the regeneration of the economies of Denmark (Dreisler et al, 2003), Israel (Malach-Pines et al, 2005), the UK (Thompson et al, 2000), France (Klapper, 2004), Australia (Taylor and Plummer, 2003), or Eastern Germany (Kaufmann et al, 1994) to mention but a few. Fostering Entrepreneurship as the engine behind market forces and satisfying local market needs as well as providing the lion share of local employment might be seen as a torch in dark economic situations. It becomes evident, that this jewel has to be preserved and supported. The future for entrepreneurship, however, is not only bright. A wave of Europe wide company succession in small and medium-sized enterprises implies that one third of European entrepreneurs will leave within the next ten years. In absolute figures, this means approximately 690,000 SMEs and 2.8 million jobs every year (Durst and Kaufmann, 2007). In addition, large companies outsource their production facilities abroad (Fuller et al, 2006; Taylor and Plummer, 2003; Klapper, 2004).

2. Differentiating Entrepreneurial Concepts

Although, it seems that the extension of the entrepreneurship concept misses a common underlying theoretical framework, the author holds, in line with Berglund and Johansson (2007), Malach-Pines et al (2005) as well as Morrison (2000), that increased diversity of entrepreneurship facets allows to better unlock and utilize the creative and innovative potential of individuals and to increase the entrepreneurial behavioural repertoire.

A variety of new entrepreneurship forms arose in recent years. As a general basis for categorizing them by their contribution to society, Thompson et al, (2000) point to different kinds of capital creation by entrepreneurs:

- financial capital in terms of wealth creation by profit driven business;
- social capital in terms of intangible resources, e.g. networking, culture and identity, as exemplified by producing products (i.e. local delicatessen) based on cultural heritage being regarded as a very good precondition for prevailing and promoting the 'Europe of the Regions' (Wechner and Kaufmann, 2006);
- social capital in terms of tangible community resources, e.g. buildings and institutions;
- artistic or aesthetic capital in terms of the feel-well factor;
- environment capital in terms of contributing to the sustainability of world resources.

Companies might produce a combination of these capitals (e.g. Body Shop).

Based on Fuller-Love et al (2006), Roper and Cheney (2005), Leadbeater (1997, quoted by Fuller et al, 2006), Malach-Pines et al (2005), Thompson et al (2000), Boyett (1997), Cooper (1973, quoted by Malach-Pines et al, 2005), Berglund and Johansson (2007), Morrison (2000), Saffu (2003), Sriram et al (2007), Farid and Yarb (2007), Kaufmann (1997; 2000); Rasmussen and Madsen (2002) and Criado et al (2002) the following entrepreneurship concepts are summarized in Table 1.

Table 1: *Entrepreneurship concepts*

<ul style="list-style-type: none">- Social entrepreneurship- A differentiation between rural and urban entrepreneurship- Civic and community entrepreneurship- Public entrepreneurship- A differentiation as to specific forms of entrepreneurship: high-tech entrepreneurship, opportunistic vs. craftsmen entrepreneurs, or to varying attitudes to growth, e.g. deliberately staying small or rapid growth entrepreneurs.- Corporate entrepreneurship- Entrepreneurship triggered by voluntary or forced upon action- International entrepreneurship: international new ventures (INVs) or born globals- A differentiation of entrepreneurship by cultural idiosyncrasies: i.e. Western mainstream entrepreneurship vs. indigenous entrepreneurship, entrepreneurship in sub-cultures, entrepreneurship in secular economies vs. entrepreneurship in Islamic countries- A differentiation of entrepreneurship in established economic settings and transitional settings
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3. Capitalizing on Disequilibria

The entrepreneur is regarded as an optimizing agent, which capitalizes on disequilibria, gaps or slacks in markets and/or organizations (Boyett, 1997). Possible disequilibria entrepreneurs might capitalize to refer, for example, to changing customer value migration and social trends, public budget constraints, economically marginalized rural areas, a changing socio-economic structure in industrialized countries with an increased emphasis on services, specific industry segment problems (especially in transition countries), utilizing local heritage (i.e. location branding), a lack of diversification and creativity, a rising gap between rich and poor or brain drain. Especially, one entrepreneurial feature might be regarded as unsettling. With its inherent features of creativity, optimism, vitality and utilization of growth opportunities entrepreneurship breaks the chain of the fixed, settling and, often comfortable, routine. These subversive and anti-systemic (Berglund and Johansson, 2007) features of entrepreneurs challenge established social patterns (Schumpeter, 1934 and 1965, quoted by Malach-Pines et al) and are different from those of the rest of society (De Vries, 1977, and Bannock, 1981, quoted by Boyett, 1997). Established traditions, hierarchies and institutions have to be questioned, changed and harmonized with new innovative ways of thinking and behaviour as poetically expressed by Gottfried Keller, a Suisse poet:

*'Let us stick to the good old things, as long as they are good, in loyalty
But on this ground let us create new things hour by the hour
Let us deeply enjoy the strong new creations'* (translated by the author).

Often, normal people face barriers in applying the above mentioned behaviour, as Seiss (1991, p.56) describes: "A human being requiring for the positive mastering of his/her existence, the experience of his/her identity feels that he/she, in this way, has tied his/her identity to a system and that he/she is in danger to fall for it. He/she has fear to overcome the system, to criticize and leave it, not only for fear of rude violence, but- and maybe that's even more important, for fear of losing his/her identity. He/she doesn't know any more, if he/she rejects the system, what to fight and live for" (translated by the author).

To create change for economic betterment, however, it is exactly this feature, which a society should want to unlock in potential entrepreneurs, channelling the arising energy into constructive and new directions. However, awareness should be created that the change to the better often entails a radically new mindset and behaviour.

4. Limits of the Key Entrepreneurial Role of Capitalizing on Disequilibria

Based on a variety of research studies conducted by the author, this paper hypothesizes, that entrepreneurs (including corporate entrepreneurs) face deficiencies in applying their key and most effective role as agents capitalizing on disequilibria in situations where they are confronted with radically new value systems, as exemplified by transitional settings requiring new entrepreneurial characteristics, internationalisation endeavors (new cultures, market entry) or by co-operating with international partners (variety of different cultures). In these situations, entrepreneurs often cannot bridge the dichotomy between acquiring new system relevant knowledge and actually applying it. As will be described later, this deficiency of entrepreneurship regarding the exertion of its original and most effective role

of capitalizing on disequilibria in environments entailing radically new value systems implies to include a synthetic, co-operative or concerted approach and to integrate the micro-sociological concept of identity. Some negative cases in entrepreneurship, which make society frown upon such as an excess of profiteering, speculation, violence and criminality (Corner and Harvey, 1991, Joint and Warner, 1996, Johannisson, 1987b, Bateman, 1997, quoted by Morrison, 2000) strongly point to 'synthetic' or concerted and co-operative approaches. The latter seems especially to be true in transition economies, e.g. in Eastern Europe (Kaufmann, 1997; Thomas, 1991). It might be interesting to investigate the research question whether unsanctioned consequences of entrepreneurship creation are just a transitory stage.

The consideration of 'synthetic experience' (i.e. a synthesis between old and new system behaviour) and the concept of identity might serve as a basis for differentiating entrepreneurship by different cultures (different value systems), by different kinds of disequilibria situations (differing levels of change of value systems) and by independent or co-operative (mainly inter-cultural) entrepreneurial behaviour. It might also serve as an underpinning theoretical basis for entrepreneurship education and training, mainly related to international aspects. Taking into account that the international environment provides growth opportunities for entrepreneurs (Dana, 2000) this topic is expected to gain increasing momentum.

5. Entrepreneurship and the Identity Concept

Concepts of identity refer to ethnic, national, and cultural identity as subcategories of social identity (Goffman et al, in Zwahr, 2003), the individual's role, character and existential identity (Burke, 1991), the individual's self-concept (Burke, quoted in Reed, 2004) and salient identity (Stryker, 1981; Arnett et al, 2003).

5.1. Identity as Mediating Variable

By successfully exerting the disequilibria bridging behaviour the entrepreneur contributes to redress the balance towards economic effectiveness. By doing so, it is suggested that the entrepreneur needs to be supported by the identity concept (Kaufmann, 1997;2000) and 'synthetic experience' (Kaufmann et al, 1994).

Especially, the literature review implies to investigate the existence and influence of mediating variables. A mediator accounts for the relationship between independent (predictor) and dependent (criterion) variables. As outlined before, the criterion variable refers to entrepreneurial behaviour in disequilibria situations characterized by new value systems (i.e. internationalisation strategies, inter-cultural co-operation, transition situations). Identity is hypothesized to be the mediating variable accounting for the relation between the environmental factors (i.e. social, economic (especially, the existence of an entrepreneurial business culture), political, technological, competitive, cultural, legal, ecological environment or macro, meso/organisational and micro/individual environmental gaps in transition (Kaufmann, 1994) being the reason for a specific disequilibrium (predictors) and the entrepreneurial behaviour which capitalises on the respective disequilibrium (criterion) and contributing, hence, to the

closure of the disequilibrium. The mediator identity is suggested to be comprised of the following aspects of identity.

- ***Character and salient identity***

Referring to character identity, Katriel (1992, quoted by Malach-Pines et al, 2005) links traits like personal strength or decisiveness to a mature identity. In addition, referring to the ability of the individual to deviate from cultural programming the concept of salient identity becomes apparent. Trompenaars (Trompenaars, 1993, quoted by Morrison, 2000) states that culture arises by interacting people whilst simultaneously determining future interaction. Argyle (1969, quoted by Morrison, 2000, p.61) continues. "In this manner social valuables such as knowledge and status are exchanged, in a negotiation of a self-identity, which may be partly innate (albeit modified by culture), and partly acquired from culture". So, although culture positively or negatively influences the attitudes towards entrepreneurship (Morrison, 2000) this concept is not regarded sufficient to explain and trigger individual entrepreneurial behaviour. The concept of identity is proposed to be included.

In a situation characterised by new value systems the entrepreneur has to develop a situation relevant new character, existential and social identity necessary to redress the disequilibria in the respective situation. A model, which informs the newly required disequilibrium relevant identity of the entrepreneur, is DeVos' and Romanucci-Ros' (1974) concept, which relates idiosyncratic ethnic identity to basic concerns of interpersonal relationships. The model provides the entrepreneur with suggestions for different instrumental (achievement, competence, responsibility, control-power, mutuality) and expressive behaviour (harmony, affiliation, nurturance, appreciation, pleasure and fortune) to bridge the respective disequilibria situation. Instrumental and expressive behaviour is scaled in negative (socially unsanctioned), indeterminate and positive (socially sanctioned) ones.

- ***Group, regional or social identity***

Thompson et al (2000) explain a break out and international expansion of local initiatives by the existence of a community identity highlighting the crucial role of relationships. The quality of relationships is a key variable of the concept of identity. Identities exist insofar people are participants of structured social relationships (Rosenberg and Kaplan, 1982). These structured social relationships require that social role positions are both, allocated and accepted by the participants of this relationship. Reed (2004) in line with Arnett et al. (2003) holds that social identity can not only be addressed but, even more, externally stimulated.

Compared to the connotation that regions are limited to market, labour and raw materials a new thinking refers to regions as a complex of social relationships (Keating, 2001). There is widespread agreement that all relevant stakeholders of a region are required to build networks, although their objectives are different (Keating, 2001). These relationships facilitate the generation of new jointly created knowledge or core competences. Furthermore, these relations and the social identity of the individual influence the process of his/her perception and interpretation and, consequently, the individual's action potential. This means that relations are fundamental for the way of thinking and the self-development of an individual. Relationships are made of trust, continuity or reciprocity.

- ***Consistency between entrepreneurial and consumer identity***

Burnett and Danson (2004) hold that identity can be expressed through the consumers (residents as well as visitors) choices epitomizing the ultimate objective of any brand strategy. In this sense, the

identity concept might be applied as the basis for segmentation strategies (Kaufmann, 2005). Baer et al (2001) related social identity to the process of developing brand equity, particularly of high involvement sports related to service brands. The ultimate success of branding consists in the consistency between corporate and consumer identity (i.e. behavioural branding). As branding of regions is targeting to positively influence relationships, a further correlation with the micro-sociological concept of identity becomes apparent. This is confirmed by Hankinson's (2007) suggestion to communicate a brand identity focusing on both, internal and external relationships. Ideally, the branding strategy should be authentically communicated and lived by all parts of the society. Identity is not given right from the outset but established over time in interaction. It is closely connected with emotions, which makes it difficult to objectify (Marxer, 2006).

5.2. Applications of the Identity Concept and of Gaps: Examples and Cases

5.2.1 Transition in CEE Settings - an Eastern German Case Study

It has been found that in the transition process of Eastern Germany and other CEE transition countries (i.e. Hungary) entailing a radical system change, entrepreneurs suffered from a dichotomy between actually keenly acquiring new system relevant knowledge and its actual application (application gap), i.e. in the area of Marketing.

A Director of the Chamber of Commerce in Leipzig described the application gap: "Yes, you can say that certainly a gap exists. It exists after having gained now about two and a half years of theoretical training and first practical experience in the market economy arena. It exists less in the area of theoretical education, but more in the practical realisation and the exemplary modelling of these measures and also in controlling the success of these measures" (Director of the Chamber of Commerce, in Kaufmann, 1997, p. 252).

The explanation for the dichotomy is seen in an identity gap, or, in other words, a new identity is the precondition for the application of the new system behaviour.

Based on, in the case of Eastern Germany, an overall national, European or cosmopolitan identity, newly required entrepreneurial features (character identity) such as initiative, carrying responsibility, decision making, profit orientation, risk taking or international and intercultural skills had to be developed. This new identity, however, should be developed based on sensitivity towards Eastern idiosyncrasies, an integration of existing cultural strengths and potential, and using a considerable scope for experiential teaching and learning techniques.

Kaufmann's (1992-1997) research also resulted in the conclusion that in different transition situations (gradual or shock therapy) entrepreneurs have to be differentiated by different identity levels. This, again, implies, that the more radical the system change (or disequilibria) is, the more synthetically and concertedly (Kaufmann, 1994) all stakeholders involved have to co-operate to balance the contradictory directions, bunch and target resources (Kaufmann, 1997; Morrison, 2000) and, hence, commonly contribute to a new identity. In this situation, governments should be very interested to support entrepreneurship as the existing capital gap coupled with increased global competition is intertwined with increasing civic demands on a welfare system. In addition to the synthetic cluster approach regarding, for example, the creation of a new social or national identity, the entrepreneurs themselves have to

develop a new, system relevant, identity supported by political, educational and economic stakeholders.

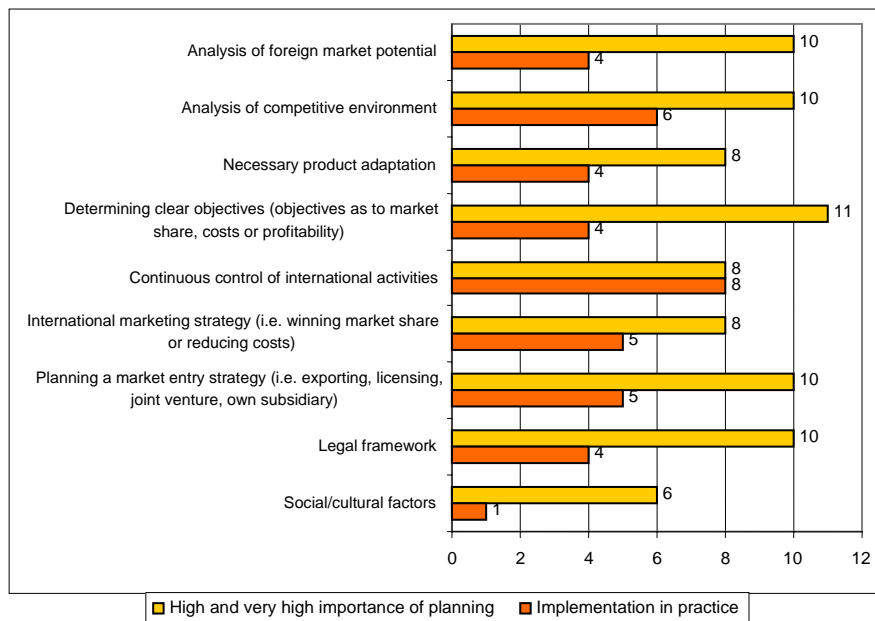
The situations of disequilibria referred at the moment of transition, for example, to the metal processing industry, mechanical engineering, clothing industry, automation techniques, robotics, electronics, construction, health, nourishment, living, communication, information and energy supply. As the former minister for research and development mentioned referring to synthetic experience: "Now we established a dialogue between science and economy: experts from the application fields, experts from the economy, who know, what the markets ask for and additionally scientists from these fields. And now we try to develop new visions. This is quite successful ...but we simply need the bunching of competence" (Kaufmann, 1997, p.185). The build up of new structures in Eastern Germany provided an innovative and creative competitive stimulus for the whole of Germany, hence, positively contributing to an overall identity, although the break down of structures was connected with high levels of unemployment and social problems in the East. Eastern Germans preferred an SME based industry structure leading to beneficial identities in the sense of higher levels of status and self-respect, good economic conditions, goal orientated technological activity as well as co-operative and competitive mutuality. Also, a new retailing restructure had identity relevant implications. Due to the over-proportionally high share of older, less flexible citizens a vibrant retail scene in the city centre was vital. This also supports the longstanding tradition of towns like Leipzig being located at the crossing point of traditional trading routes (Via Regia and Via Imperii). SME retailers in the city centre needed to become competitive, i.e. via lobbyism and concerted marketing activities, against the background of increasing market shares of multiples. According to retail associations and a lord major SME retailers are regarded as contributing to the identity of the city centre which were threatened to become deserted and uniform triggered by stereotype buying centres and foreign retail chains. Again, however, the rise of multiples, especially, in green field locations triggered a new retail structure to the detriment of SME retailers, which were not trained in newly required marketing or management techniques, and many of the corner sweet shops could not survive. The availability of city centre was aggravated by unresolved property questions due to restitution claims of former expatriates. This question deserves to be top of the transition agenda.

A trade mediator referred to the contribution of an educational institution to synthetic experience by embedding Leipzig into international relationships: "I am glad to tell you, that the Commercial College Leipzig (Handelshochschule Leipzig) has risen again. With the help of the Chamber and great sponsors we could achieve, that an international commercial college has been established here again. We would like to invite professors, guest professors, and so on to come to Leipzig and give their contribution, because I could very well imagine that if a great renowned university in your country is prepared to do that, commercially, culturally and scientifically based relations could develop" (Kaufmann, 1997). In the business arena, international management skills and preparedness (i.e. regarding Strategic Alliances) still had to come to the fore as the following statement of a chamber of commerce employee reflects: "we directly address our enterprises if they are interested at all to get in contact with international partners. Not all of them would like to have a contact conversation with a foreign partner at all" (Kaufmann, 1997). Also the Western marketing philosophy of consumer sovereignty was not internalised yet: "I am paid by the customer, who enters the enterprise and by the sold products and services. This thought is by far not here yet" (Trade mediator of the Chamber, in Kaufmann,

1997). Pointing to the necessity to reflect on the past system, other respondents confirmed this statement by stating that the purchase and production department had by far a better reputation compared to the sales department. A consultant and an official of the Ministry of Work and Economy reasoned this behaviour by the still existing productivity mentality of all Germans. In this context, Arnett et al's (2003) approach to link the concept of salient identity to marketing and consumer behaviour might be a promising route to follow.

5.2.2 Internationalisation of SMEs - The Liechtenstein Case Study

Table 2: The Strategy Implementation Gap



Descriptive research (Kaufmann, 2008) implies that small and medium sized enterprises reflect a gap between awareness of internationalization issues and actual implementation strategies for internationalization being subject to ongoing research in funded projects (Interreg III B and International Lake of Constance University). This application gap of entrepreneurs in areas, where an unfamiliarity with new market and value systems exists could also be found in the field of internationalisation of SMEs. In line with the ENSR survey (EU, 2005) a Rhine Valley survey, embracing Liechtenstein, Graubunden and St. Gallen as well as the Austrian county of Vorarlberg, a gap was identified between the perception of the importance of strategic preparatory work for internationalization and the actual investment in its implementation (Kaufmann, 2008). In other words, a behavioural deficit refers to the observation that, notwithstanding the identified importance, none or only insufficient practical implementation steps are undertaken (see Table 2). Irrational aspects of insecurity, fear or rejection or a lack of existing international relationships and relationship knowledge point, again, to the relevance of the identity concept.

5.2.3 Corporate Entrepreneurship in Banks

5.2.3.1 *Internationalisation of International Banks: The Bosnian- Herzegovinan Case study*

A research study of Kaufmann and Zagorac (2007) revealed that international banks when entering the market of Bosnia Herzegovina identified that the customer identity is in transition and that the changing customer identity is affecting customer behaviour. In consequence, the interviewed international banks already adapted their marketing strategies to the changing customer identity and, very interestingly, intend to contribute to the formation of the customer identity in Bosnia Herzegovina. However, the hypothesis that international banks take on responsibility for the identity development in Bosnia-Herzegovina was only partially supported by the interview results. The answers were vague and generally formulated implying that the aspect of taking on responsibility for the identity development of the customer is not considered on a conceptual basis. Partially, the interviewees could not even answer this question. On the other hand, the will and, especially, some actions of the banks to develop the region, i.e. by donating for marginalized groups or projects, as hospitals, medical equipment and cultural events, show a responsible attitude. „Our philosophy pursues the direction that we give that, what we also take” (Interviewee 1). The following statements underline this view. „We do not only want to entice the customer, but also to keep him on a long-term basis. We would like to be a partner, which accompanies him/her in life, thus to be a part of his/her identity” (Interviewee 6). „We donate, make various sponsorships, most important is that our customers are satisfied” (Interviewee 5).

It can be summarised on the basis of this descriptive research with international banks in Bosnia-Herzegovina that banks, which enter an international market apply the identity concept, but not in a structured and conceptual way. The local banks are usually aware of this issue due to personal knowledge and experience and use this for implementing marketing activities. These activities, however, do not seem to be based on marketing strategies related to a holistic identity concept but are rather expressions of individual fragmented marketing activities. The high level of decentralization of budgets and marketing responsibilities reflected that the international banks applied factors of corporate entrepreneurship.

5.2.3.2 *Private Banking in Liechtenstein*

The application of the identity concept is also suggested in a further strategic business unit of banking: private banking. Due to the often considerable level of scope of independent action delegated by the High Net Worth Individual to the Private Banking consultant, which requires a significant amount of self-initiative by the consultant, this strategic business unit has to apply corporate entrepreneurship. Latter is also reflected by the very high level of both, life and professional experience and expertise of the High Net Worth Individual being often successful entrepreneurs requiring a consultation on the ‘same eye level’. The current challenges in Private Banking refer to the development of social competence of the Private Banker, which is, at least, equally important compared to expert competence. Customers demand to negotiate with consultants displaying a similar experience background. Especially, young Private Banking consultants face difficulties to catch up on this requirement. Compounding the matter, the increasing amount of international High Net Worth Individuals require social competence and emotional intelligence on a cross-cultural scale. The Identity concept, as repeatedly mentioned, concerns with relationships and, hence, can be used for personality development (Kaufmann, 2004a; 2004b; Pracht, 2006).

5.2.4 Interregional Branding and Entrepreneurs

Further evidence, that the concept of identity might be a mediator in areas where an integration of new system knowledge and behaviour is required, could be found in a study on location and inter regions branding.

Strategic stakeholders (excluding entrepreneurs) seemingly were not aware of the concept of 'identity' and its role or function within the national location brand (entailing a variety of different value systems) and inter region brands crossing national borders pointing to possible reasons for inefficiency or even possible failure of such projects. This is also reflected by statements lamenting a lack of consideration of the quality of internal and external relationships, i.e. of the Liechtenstein brand.

Due to the high importance of the quality of internal and external relationships in these projects a stronger consideration of the concept of identity is highly recommended. The importance of this concept for entrepreneurship in this context is indicated by Simpson and Bretherton (2004). The authors illuminate the detrimental influences of idiosyncratic entrepreneurial behaviour (SMEs), i.e., the characteristics of independence on networking activities when branding leisure destinations. The authors, however, regard the role of SMEs as being crucial for delivering the promises created by the brand image, which is seen as the basis for the evaluation of the experience by the visitors (Kokosalakis et al, 2006). A stronger consideration of the identity concept is seen to improve the relationships within the Leadership/Organisational Board, the creation and positioning of the core identity of the inter regions brand, as to the internal brand identity (Internal relations (culture) amongst organisation board members and partner regions; balance between international and local focus; involvement), as to the external brand identity (Compatible alliances and partnerships; national and regional identity; coherence between internal and external identity; specificities of SMEs), the diffusion and communication of the joint identity, and the Authentic delivery of location brand claim and values.

5.2.5 Entrepreneurship Education and Training: A New Paradigm Pointing to Identity

The resource and networking perspectives of entrepreneurship embrace the notion that entrepreneurial success has, beyond personal characteristics other origins, e.g. industry structure, social capital venture strategy or cluster building. They suggest that entrepreneurs use networking to complement certain gaps and insufficiencies (Berglund and Johannson, 2007; Dana, 2000; Thompson et al., 2000). In an interesting discourse on contradictory traditional and more up-to-date alternative entrepreneurship concepts, Berglund and Johannsson (2007) point to entrepreneurs, which are constructed in social interaction with others rather than on stereotyped and idealized personalities resembling heroes to be emulated (Malach-Pines et al, 2005). This view is supported by Morrison (2000) emphasizing to embrace the notion of social action. This distinction might be beneficial for teaching and training purposes as stereotypes have a tendency to exclude and some people have difficulties to relate to them (Berglund and Johannson, 2007). Especially, regarding the increased internationalization of entrepreneurs entailing new relationships with a variety of international stakeholders the relevance of the identity concept for education or training of entrepreneurs becomes apparent. The latter is even more pronounced in the case of entrepreneurs being 'born global'.

6. Conclusion

Based on a comprehensive literature review and empirical research in a variety of settings the paper explained that the entrepreneurship concept requires amendment in situations where entrepreneurs are confronted with new value systems (i.e. internationalisation, inter-cultural co-operation or transition situations). In these situations, entrepreneurs are perceived to have an application gap of their core role of capitalizing on disequilibria, which is crucial for the economic and social well being of a society. When creating new explanatory knowledge by quantitative research or triangulation research approaches as to entrepreneurship in the aforementioned situations it is suggested to validate the hypotheses of this paper that identity is the mediating variable between the predictor and criterion variable and that 'synthetic' experience has to be included as a new predictor variable with a heavy weight. In this sense, the paper invites representatives of entrepreneurship networks to co-operate. Taking the increasing importance of entrepreneurial internationalisation and the still existing demand in this field to catch up on into account, the resulting findings might result in trend setting educational and training approaches.

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