



*OECD LEED Forum on Partnerships and Local Governance*  
**Handbook n.5**

**PARTNERING FOR SUCCESS IN FOSTERING GRADUATE**



OECD LEED Programme



**Foreword**

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Evidence is growing, across the OECD and beyond, that new and young firms are key job creators, especially those that demonstrate dynamism and innovation. More such firms are needed to recover from the current economic and jobs crisis and to sustain growth.

Universities, with their combination of knowledge, research and high-skilled human capital are unique places for great ideas to emerge as entrepreneurial ventures. Several different inputs are required for successful entrepreneurship, but one of the most important is people with the 'right set' of skills and competences to identify and realise entrepreneurial opportunities.

The number of universities which are developing activities to mobilise their graduates for entrepreneurial careers is growing rapidly. For many of them entrepreneurship education and the provision of 'hands on support' are new tasks, which require not only closer links between 'research' and 'education', but also partnerships with entrepreneurship support providers and (global) sources of financing.

This is why the OECD LEED Programme has at the top of its agenda a work programme on Skills and Competences for Entrepreneurship that provides advice and guidance to policy makers and those involved in university and vocational education on how to improve graduate entrepreneurship support.

This booklet is part of this work programme. It is addressed to practitioners and strategists in business support providers, who would like to increase collaboration with universities in supporting the birth, survival and growth of graduate entrepreneurship, and gives practical advice on entrepreneurship education, start-up support and partnership working. It was prepared with inputs from the participants of an international seminar on "Universities, Skills and Entrepreneurship", held at the OECD LEED Trento Centre in October 2010 in the framework of the OECD LEED Forum on Partnerships and Local Governance. The Forum provides almost 2 600 members from over 53 countries with a unique platform to advance their work on promoting local economic and employment development.

I hope you will find the handbook useful.



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### ***Acknowledgements***

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The LEED Programme is grateful to the energy and openness with which many people have contributed to LEED work (to date) on promoting graduate entrepreneurship through the development of skills and competences and entrepreneurial ecosystems. Special thanks are extended to the participants of the 2010 “Universities, Skills and Entrepreneurship” seminar and to Andrew Harrison for the inclusive and thought provoking facilitation of the debates, to Alain Fayolle and Janice Byrne for their research on entrepreneurship education and training educators that is summarised in this handbook, to Anita van Gils for the description of entrepreneurship education at Maastricht University and to Phil H. Phan for the example of entrepreneurship support at the Rensselaer Polytechnic Institute, both presented in here. Special thanks go to Elisa Campestrin, Roberto Chizzali, Laura Nardelli and Joseph Tixier of the OECD LEED Trento Centre for their valuable research assistance and support. Andrea-Rosalinde Hofer has put this handbook together; she can be contacted at [andrea-rosalinde.hofer@oecd.org](mailto:andrea-rosalinde.hofer@oecd.org).

Work on universities and entrepreneurship support is advanced during the period 2010-2012 in the framework of an international OECD LEED project on “Skills and Competences for Entrepreneurship”. Countries, regions and single organisations (in particular universities and vocational education providers) interested in participating can contact [jonathan.potter@oecd.org](mailto:jonathan.potter@oecd.org) for further information.

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## 1. Promoting graduate entrepreneurship: why and how

*“Indeed, the events that explain why entrepreneurship becomes effective are probably not in themselves economic events. The causes are likely to lie in changes in values, perception, and attitude, changes perhaps in demographics, in institutions ... perhaps in education as well (Drucker 1993, 13).”*

Successful entrepreneurship requires enterprising people with appropriate skills and competences adapted to the needs of entrepreneurship – opportunity recognition, team leading, negotiation, marketing, strategic management etc. However, these skills and competences and the opportunity to test them out in a supported environment, have not traditionally figured as part of the curricula of universities and vocational training colleges or been a major part of self-employment schemes. This is beginning to change. Many new training initiatives and innovative approaches are currently emerging affecting where and how skills and competences for entrepreneurship are being taught and learned. Many new training initiatives and innovative approaches are currently emerging as to ‘where’ and ‘how’ skills and competences are being taught and learned. Yet, they often co-exist with information gaps concerning what are crucial skills and competences, what role is there for public policy and for higher education providers, and what constitutes good practice in effective local entrepreneurship support.

University graduates can have enormous potential for innovation and economic development because of their exposure to diverse knowledge and research activities during their studies. Mobilising them for entrepreneurial careers, enhancing their entrepreneurial skills, and providing support for business start-up are important, yet often new, tasks for universities. To best support entrepreneurship, universities themselves need to be entrepreneurial. Internal governance, positioning in local, national and global strategic partnerships and the right incentives to get professors, students, researchers and administrative staff involved, are key issues that define the role that universities nowadays assume in promoting economic development and growth. University entrepreneurship support on its own, however, has its limits. It prepares students for future entrepreneurial careers and promotes the commercialisation of research results, but it is close co-operation and integration into the wider local entrepreneurship support infrastructure and its services that increases effectiveness.

Having the right mix of attitudes, motivation, knowledge and skills is crucial for starting-up, running and growing a business. Family, friends, and school are important points of reference early on in this process; only a share of what is needed can be learned in university. Yet, as the latter gathers people from various disciplines with different risk perceptions and ideas, it provides a unique environment for nascent entrepreneurship. Motivated people need the right skills to identify opportunities and to turn their entrepreneurial projects into successful ventures, skills such as business planning, risk assessment, team building and negotiation, as well as basic management and technical skills. There is a debate on whether or not entrepreneurship can be learned, what should be trained, how and by whom. Some universities rely on a more traditional approach in which their business schools are the main actors in developing skills for entrepreneurship, whereas others engage on a broader level by integrating entrepreneurship skills into curricula, using new teaching methods and involving entrepreneurs as teachers appear to actually make a difference in learning outcomes.

Through their entrepreneurship support activities universities are opening up to ‘external actors’. This is likely to challenge university governance. Universities, for example, may not fully realise their local economic development potential as promoting entrepreneurship only falls into their ‘third mission’ with no or weak links to the core missions of teaching and research. Internal administrative barriers and a lack of incentives may actually impede students, researchers, professors and administrators to think and act entrepreneurial, and efforts to develop entrepreneurship skills support may

not be fully effective because of a missing interface with the local economy's wider entrepreneurship support system.

This handbook is written for practitioners and strategists in business support providers, who would like to increase collaboration with universities in supporting the birth, survival and growth of graduate entrepreneurship. It builds on "Universities, Innovation and Entrepreneurship: Criteria and Examples of Good Practice" and "Shooting for the Moon: Good Practice in Local Youth Entrepreneurship Support" – two handbooks published by the LEED Programme as 'tools' to provide practical advice that facilitates thinking about the future of current practices and strategies.

This handbook continues the tradition and as Harrison (2011, submitted) points out, the aim is to provoke thinking 'outside the box' in:

*"reflecting current strategy & practice, in light of trends and aspects of the future and in conceptualising entrepreneurship not only as a subject (or quality) that can be promoted through standard education and business start-up support but as a form of behaviour and set of attitudes (appropriate to their own context)."*

## 2. Strategy

University graduates have enormous potential for innovation and economic development. Mobilising them for entrepreneurial careers, enhancing their entrepreneurial skills, and providing support for business start-up are important, and often new, tasks for higher education institutions that are only now being fully recognised. Worldwide, the number of universities providing entrepreneurship support for their students, graduates, researchers and professors is growing. The purpose of university entrepreneurship education is two-fold.

Increasing demand for higher education, the globalisation of 'tasks' (Baldwin, 2006), changing knowledge structures and transmission channels, evolving dynamics between industry, government and the education sector, as well as societal demands gave rise to entrepreneurship education in universities. An international study<sup>1</sup>, comparing tertiary education students' attitudes to entrepreneurship in 19 different countries across the globe, showed that 43% of students intend to pursue some form of independent employment five years after graduating.

Contributing to the creation and development of entrepreneurial attitudes and motivations to start-up a firm is as important as developing the skills needed to successfully run and grow a business venture. Different strategies have been advanced to this end and various forms of support are established, ideally bridging between support services and actors within and outside universities. Tailored practices have emerged in educating future entrepreneurs and in helping them to take their first steps in forming and growing a business.

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<sup>1</sup> The Global University Entrepreneurial Student Spirit Survey (GUESSS), 2008 questioned over 60 000 students in 20 different countries across the world as to their career intentions vis-à-vis entrepreneurship and their attitudes to entrepreneurship and entrepreneurship education.

### ***Education, research, and ...?***

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The emergence and implementation of these strategies has had an impact on what universities perceive as their 'first', 'second' and 'third' missions, and what the best linkages are between education, research, and promoting social and economic development. Internal governance, the positioning at local, national and global levels, and strategic partnerships are issues for debate in defining the role of universities in promoting economic development and growth. Universities may not fully realise their entrepreneurial potentials, if promoting entrepreneurship only falls into their 'third mission' with no or weak links to the core missions of teaching and research and a lack of incentives and rewards for professors and researchers, who act as mentors for would-be-entrepreneurs and are sharing research results to this end.

The provision of entrepreneurship support by universities requires additional financing which can come either from grants, donations or own revenues. Public kick-off funding for entrepreneurship support infrastructure is common to many OECD countries. Yet, it is the balance between a minimum long-term financing for staff costs and overheads and the openness to private sector involvement in the financing of Entrepreneurship Chairs and incubation facilities which proves to be successful. In the long-run the goal should be a high degree of self-sufficiency of the university internal entrepreneurship support system.

The combination of government funding and private sector financing allows universities to sustain and expand their 'third mission' because of a broader funding base and less dependency upon time-limited public funding. Activities to combine funding sources are different for each university and may range from revenues from licences and the sale of shares in spin-off companies to entrepreneurship training courses and business consultancy. This is often backed up by basic funding of overhead costs for support infrastructure and staff from university budget.

Decisions about resource allocation should be driven by strategic choices that the university makes regarding the areas of technology and the various modes of transfer – licensing, sponsored research, start-ups, and other mechanisms of technology transfer that are focused more directly on stimulating economic and regional development, such as incubators and science parks. Licensing and sponsored research can generate a stream of revenue, whereas investment in spin-offs and the support start-ups could yield returns – both monetary and relational – in the long run.

Entrepreneurship education and the provision of hands-on support are the two main areas where universities are opening up to 'external' actors for strategic partnerships to support the birth, survival and growth of graduate firms. For both areas key university internal matters are presented below in a way that gives practitioners and strategists in business support providers a first overview of potential opportunities and challenges in partnering with universities.

In addition to brief summaries of evidence, criteria of good practice are presented. The criteria are part of a criteria list that the LEED Programme developed (OECD 2010a,b) for universities as a 'tool' to self-assess and re-orient their (i) strategy in supporting entrepreneurship; (ii) the pool of financial and human resources; (iii) support infrastructure; (iv) current approaches in entrepreneurship education and start-up support; and (v) evaluation practices.

The final section of this handbook summarises key policy issues in promoting graduate entrepreneurship that can be taken up by local and national policy makers, by university management and staff and by practitioners and strategists in business support providers to enhance the effectiveness of partnerships in promoting graduate entrepreneurship.

### 3. Entrepreneurship education

Entrepreneurship support in universities, in particular entrepreneurship education, is demanding reinforcement and development of existing human resources and employing new staff. Working with entrepreneurs, chief executives, bankers, venture capitalists and business angels is important too. It provides access to the 'world of business', and can help to overcome staff bottlenecks, as we will see further down. The first entrepreneurship course was introduced in the Harvard Business School in the 1940s by Professor Myles Mace. Yet, it took until the 1970s before entrepreneurship education found its way into other universities (Vesper and Gartner, 1997). Still today, there is debate as to whether entrepreneurship should (and can) be taught at universities. We start from the assumption that "everyone who can face up to decision making can learn to be an entrepreneur and to behave entrepreneurially" and that entrepreneurship is "behaviour rather than personality trait" (Drucker, 1993: 26; 34). Entrepreneurship can therefore be promoted by appropriate teaching. To complement entrepreneurship education, certain targeted start-up and early growth support needs to be provided, such as finance and training. We will discuss this further down.

Assisting the establishment of new firms is a key objective of university entrepreneurship support, but not its only one. Creating entrepreneurial mindsets that drive innovation in existing firms is of equal importance, yet success is much more difficult to measure. The economic recession has triggered cuts in government funding and resource allocation for universities and put entrepreneurship education under increased performance pressure. Demonstrating the achievements of entrepreneurship education towards external funders remains a key challenge, as evaluation efforts are still considered to be relatively weak or underdeveloped (Wilson, 2008). The co-existence of tangible outputs, such as, for example, the number of spin-offs and start-ups assisted, and intangible outcomes – creating entrepreneurial mindsets – remains a key challenge.

**Table 1. Criteria of good practice**

1. Entrepreneurship education is progressively integrated into curricula and the use of entrepreneurial pedagogies is advocated across faculties.	There is growing agreement in the academic debate and in policy design that of the many inputs and circumstances contributing to the success of an entrepreneurial venture, having the right skills and competences is of particular importance. Motivated people need the right set of skills to identify entrepreneurial opportunities and to turn their entrepreneurial projects into successful ventures. Starting early in getting familiar with the idea that running one's own firm is a potential career option is important and education can play a core role in this.
2. The entrepreneurship education offer is widely communicated, and measures are undertaken to increase the rate and capacity of take-up.	
3. A suite of courses exists, which uses creative teaching methods and is tailored to the needs of undergraduate, graduate and post-graduate students.	It is important that all students have access to a wide range of entrepreneurial learning opportunities inside and outside their courses of study. Increasing take-up rates will require both expanding and tailoring the offer in entrepreneurship education.
4. The suite of courses has a differentiated offer that covers the pre-start-up phase, the start-up phase and the growth phase. For certain courses active recruitment is practiced.	The goal is to develop entrepreneurial graduates, who are self-confident, capable, motivated, and experienced to think and act entrepreneurially. With suites of courses, the offer in entrepreneurship education can be expanded and tailored to different student interests and needs. The exchange of good practice in creative teaching methods at wider regional, local and international levels, allows for improvement and innovation.
5. Out-reach to Alumni, business support organisations and firms is a key component of entrepreneurship education.	
6. Results of entrepreneurship research are integrated into entrepreneurship education messages.	Collaboration with 'externals' can help to overcome bottlenecks in terms of staff and expertise, but also connects the students with the 'world of business'.

Source : OECD (2010a,b).

Across OECD countries university entrepreneurship education in universities covers a wide variety of audiences (traditionally students of business and management, and engineering, but lately this is more and more opened across humanities), objectives, contents and pedagogical methods (Fayolle and Gailly, 2008). The demand for entrepreneurship courses, in particular from government side, is growing for science, engineering, and arts faculties (Cooney and Murray, 2008). The underlying assumption is that innovative and viable business ideas are more likely to arise from students pursuing technical, scientific and creative studies. Reality looks, however, still slightly different: in Europe and the rest of the OECD, except for the US, the majority of entrepreneurship courses are offered in business and economic studies (Byrne and Fayolle 2010, submitted).

In the following, a summary of key findings from an expert survey conducted by Byrne and Fayolle (2010, submitted) is presented. The survey focused on (i) the current main objectives driving entrepreneurship education; (ii) the content of university entrepreneurship education; and (iii) the teaching methods and pedagogies.

#### ***OECD countries differ in their driving objective...:***

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In some OECD countries, particularly in Australia, Poland, Czech Republic and Italy, entrepreneurship education is still primarily centred on the twin objectives of “economic development and job creation” (McMullan and Long, 1987). Yet, there are signs of a shift towards the prevalent objective in the US, that is, on the stimulation of growth-oriented ventures (Wilson, 2008). More focusing on individuals, Denmark and the UK, emphasise the guiding objective of creating “entrepreneurial mindsets” and the need to equip students with skills and competencies that are useful for running one’s own business or being employed.

#### ***...and in the extent of research-education links in entrepreneurship education:***

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Research on entrepreneurship education is widely spread in Europe and the US, whereas research results for Chile, South Korea and Japan are non-existent in internationally published journals. Research-oriented models of entrepreneurship education in eastern Europe are still low in numbers, and conducted only in a handful of institutions (Varblane and Mets, 2010). There is thus a strong need for comparative studies, in order to understand pitfalls, follow common successful trends, and anticipate new approaches in entrepreneurship education.

#### ***Traditional methods in courses and teaching methods ‘about’ and ‘for’ entrepreneurship:***

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What entrepreneurship education can achieve may range from a gradual change of mindset, the ‘how-to’ in multidisciplinary problem solving, to the development of skills and competences needed to successfully start-up and run a business. Although entrepreneurship courses differ across OECD countries, they all share subjects that are either *about* or *for* entrepreneurship (Kirby, 2004). In Europe, the focus is on theory on entrepreneurship and contextual background on the entrepreneur and society, and small business management, whilst venture development and growth is prevalent in the US.

The majority of entrepreneurship courses are related to teaching *for* entrepreneurship. Courses include “idea creation and opportunity recognition”; “opportunity assessment”; “managing the growing business”; or “new product development”. “Business planning” and “new venture creation” courses were by far the most common within this category. Generalist courses i.e. those that essentially teach *about* entrepreneurship remain popular. Examples include “The role and importance of entrepreneurship in society” and “The macro-economic and socio-cultural dimensions of Entrepreneurship”. In Europe entrepreneurship courses that deal with particular national contexts (i.e. “The Italian

Entrepreneur: between individualism and creativity”) are frequent. In France, the Netherlands, Finland, Sweden courses on entrepreneurship theory are popular.

Case study teaching methods are often used, although it seems lecture-style classes and traditional (frontal) teaching still form a core part of the curriculum. Sadly, good quality participative, experiential problem-solving-based education is more expensive than traditional ‘talk and chalk’ style lectures (Cooney and Murray, 2008). Resource requirements are not adequately recognised in funding allocation mechanisms.

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***Not enough is being done on values, emotions and the ethical component of being an entrepreneur:***

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The dominance of business planning and venture creation modules leaves little room for addressing values, emotions and the ethical component of being an entrepreneur. In business planning courses, students are often exposed to a very sequential and functional based approach to understanding and learning about venture development, which leaves little room for creativity, values, emotions and the ethical component of being an entrepreneur.

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***On the differences between Europe and the USA:***

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Many of the interviewed experts felt that entrepreneurship education in their country was lagging behind the US. Looking at this from the debate in the literature, it seems that whilst the US may benefit from a more mature state and increased legitimacy of entrepreneurship education (Katz, 2003; Kuratko, 2005), the impacts at classroom level have not yet been fully explored. It is questionable whether (i) the course contents and delivery is significantly different to that in Europe, given the differences in the latter, and (ii) whether the US curriculum development is applicable to other socio-economic contexts.

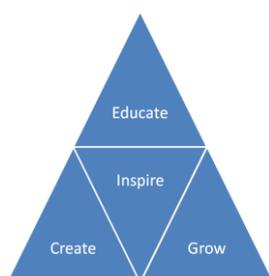
From what is known at present, it appears that US universities are stronger in multi-disciplinary entrepreneurship education. In Europe, building inter-disciplinary approaches, making entrepreneurship education accessible to all students, mixing students from economic and business studies with students from other faculties and with different backgrounds, and creating start-up teams remain key challenges (EC, 2008). Crossing boundaries between disciplines, and multidisciplinary collaboration, are, however, essential elements in building enterprising abilities (EC 2008, OECD 2010b).

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***Example: Entrepreneurship education at Maastricht University***

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Entrepreneurship education at Maastricht University is an offspring of the School of Business and Economics that was in a follow-up initiative by the Dutch government developed into the Maastricht Centre of Entrepreneurship. The Centre combines in its four-fold structure mobilisation for entrepreneurship with education and start-up support.



INSPIRE targets the entire university and connects with the ‘world of business’. The Center, together with students, organises every year an entrepreneurship week with a series of lectures and workshops with international business speakers for students from the different faculties and schools. Further, a business plan competition for female students and employees of the university and ‘open sessions’ on “Entrepreneurship: What they don’t teach you at universities” are organised.

EDUCATE organises teaching and learning related to entrepreneurship. The main activity is a minor in entrepreneurship with the following courses:

- *Essentials of entrepreneurship (I and II)*. Students become familiar with the role of entrepreneurship in today's time.
- *Social and sustainable entrepreneurship*. Entrepreneurship is a life style that combines various forms and motivations of economic activity. Students develop in this course an understanding of the subtle but sometimes substantial differences between a social, a sustainable, and a pure-profit oriented venture and the specific challenges and opportunities of doing 'business' in the social and environmental spheres.
- *Commercialising Science and Technology*. The aim of this course is to make students understand when and how research findings and technological breakthroughs can be transformed into business ventures, in forms of patenting and licensing, spinning out or business start-ups.
- *Creativity and concept development skill*. Creativity in this course is linked with the development of business concepts.

CREATE links with the pre-incubation and incubation activities and the coaching and financing for spin-offs delivered by the Centre for Entrepreneurship in the GROW component.

Forerunners to entrepreneurship support at the University of Maastricht were several research projects on the intentions for business start-up amongst students and the role of universities in promoting skills and competences for entrepreneurship. A student survey amongst students from the School of Business and Economics revealed that 69% had intentions to start their own business in the future. Undergraduate international business students exhibited somewhat higher entrepreneurial intentions (74%) than international economics students (63%). Twenty-five percent of the students aimed to realise this ambition within the first five years after graduation. As main reasons for not starting-up within the first five years after graduation were mentioned the lack of money (not having sufficient savings) and the need to first gain working experience in existing organisation. Factors that positively affected entrepreneurial intentions amongst the students were: the perception of self-efficacy, a higher tolerance for risk and financial insecurity, seeking challenging work and a positive perception of desirability (Van Gelderen et al., 2008).

A second project (Fastré and Van Gils, 2007) studied the role of universities in the development of entrepreneurial competencies. Whereas the students were very satisfied with the preparation for conceptual and strategic competencies, they perceived the opportunity competencies (related to recognising and developing market opportunities through various means) as the most important one for an entrepreneur and indicated that the university provided little preparation for it. In addition, a survey of the Research Centre for Education and the Labour Market (ROA) at the University of Maastricht of employers of alumni from the School of Business and economics indicated that almost half of the surveyed companies emphasised that skills and qualities that are related to the concept of 'entrepreneurship' are important criteria during the recruitment process.

The results of this research led to a broad application of problem based learning in entrepreneurship education, and a tailored M.Sc. International Business program in Entrepreneurship and Small Business Management, developed by a small project team of entrepreneurship researchers. The design phase started in 2005 and in September 2007 the first students enrolled; at present every year 60 students enrol.

*Problem-based learning as a teaching approach in entrepreneurship education*

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Problem-Based Learning (PBL)<sup>2</sup> has been the educational model of University of Maastricht ever since it was founded in 1976. PBL involves students working on problems in small groups of ten to twelve with the assistance of a faculty tutor. Problems serve as the context for new learning. Their analysis and solution lead to the acquisition of new knowledge and problem-solving skills. Problems are encountered before all relevant knowledge has been acquired and not merely after reading texts or hearing lectures about the subject matter underlying a problem. This latter feature reflects one of the essential distinctions between PBL and other problem-oriented methods.

The problem-based tutor's function is to coach the group, which entails providing support to make student interaction productive and helping students identify the knowledge needed to resolve their problem. As a result of the problem-solving process, students generate questions (learning issues) about what kind of knowledge is required to explain the mechanisms underlying the causes of the problem. After leaving the meeting, students undertake their own research on the issues they have identified using a variety of resources. Significant time is available for independent study. The PBL process is completed when students report on what they have learned at the next meeting. The students' first goal is to relate newly acquired knowledge to the problem at hand. Their second goal is to move to a more general level of understanding, enabling them to transfer the knowledge and skills they have acquired to new problems. After completing this problem solving cycle, students will return to analyse a new problem, again following the procedure outlined above.

As a corollary to the characteristics above that the curriculum is student-centred and the teacher is a facilitator and not a dispenser of learning, the students are expected to learn from the world's knowledge and accumulated expertise by virtue of their own study and research, as it is hoped they will do after graduation and in practice. During this self-directed learning time, the students work together in their learning, discussing, comparing, reviewing and debating what they have learned.

PBL emphasises the development of self-directed learning skills, interpersonal skills, and problem-solving skills. Development of these skills is integrated in our course work. Problems and cases in all our courses reflect (parts) of professional practice. Through the systematic analysis of problems in small groups, students learn how to deal with the complexity of business problems as encountered in professional practice. During an average semester (equal to four regular courses) students go through this problem-solving process at least twice a week. During this process they learn how to assess the knowledge needed to solve a problem, how to deal with (competing) inputs from different students, and how to decide about what resources are needed to deal with a problem. At the end of the problem-solving cycle students are required to communicate their findings in a transparent way. ROA research and other surveys show that students and graduates of the University of Maastricht highly value the entrepreneurship education efforts as a contribution to developing professional skills.

Students, as part of the M.Sc. International Business programme in Entrepreneurship and Small Business Management, work in teams for the duration of one academic year, to start-up a company or to assist the management team of an existing SME in the development and execution of a new strategic plan. During this project, students are coached by an entrepreneur, a university mentor and an accountant. Several of the student companies have been continued as small businesses after the students graduated.

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<sup>2</sup> For more information on the problem-based learning model, see Gijsselaers et al. (1995) and Gijbels et al. (2005).

### ***Investing in human resources***

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Entrepreneurship education requires something else than simple textbooks and an ordinary classroom setting. An 'entrepreneurial' pedagogy seeks to enhance entrepreneurial capacities and capabilities amongst students by giving them more autonomy and responsibilities in the learning process through experiments and reflexive learning and a greater application of collective and co-operative learning. Most academic teachers have little or no practical experience of being entrepreneurs themselves, calls have been made for more training opportunities for those involved in entrepreneurship training (EC, 2008; OECD, 2008; OECD 2010b; World Economic Forum, 2009).

Rewarding those who are designing and implementing innovative and high quality teaching and pedagogical material, and those who are sharing and/or instigating the dissemination of ideas and good practice will promote continuation of activities and encourage others to join. Well-publicised yearly awards on the 'Best Entrepreneurship Innovative Pedagogy' and the 'Best Entrepreneurship Professor' for students to vote is a soft incentive that can stimulate more involvement by professors and teaching staff in entrepreneurship education and also raise the awareness of entrepreneurship amongst students. Reducing the teaching load for those involved in 'strategic' entrepreneurship activities, such as entrepreneurship ambassadors and mentors should be considered.

Entrepreneurship education today is characterised by a more eclectic collection of teaching staff than other disciplines. Byrne and Fayolle (2010, submitted) provided the following overview:

- Academic staff (professors, lecturers, assistant lecturers);
- Doctoral students and research assistants;
- Practising entrepreneurs;
- Pracademics (entrepreneurs employed as university staff);
- Industry experts;
- Business professionals i.e. lawyers, consultants, accountants, financiers etc.;
- Incubator or business support staff;
- Alumni.

Although entrepreneurs and business practitioners are in general involved in teaching, there are few examples of entrepreneurial practitioners engaged in the full curricula experience. Most frequently, they are *ad hoc* involved in teaching, providing personal testimonials or guest lectures, or acting as member of competition committees.

This variety of teachers, who are likely to be different in their teaching methods and approaches to learning, introduces several challenges that need to be addressed by the people in charge of entrepreneurship education. The 'external' contributions need to be well integrated into the course programme and its single components. It is not just about involving 'deliverers', but also in consolidating different methods and approaches, which requires flexibility as much as performance management.

Working with entrepreneurs, CEOs, bankers, venture capitalists and business angels can help overcoming bottlenecks in staff and expertise. It is important that entrepreneurship education is taken serious by both students and teachers (which does not mean it cannot be fun), but it should also help to fulfil the academic requirements for both sides. An example of this is the Cambridge Centre for Entrepreneurial Learning.

**Box 1. Cambridge Centre for Entrepreneurial Learning: a people approach instead of a 'how-to-approach'**

The focus of the Cambridge Centre for Entrepreneurial Learning (CfEL) is on planning and implementing entrepreneurship courses, within the whole University, using a specific philosophy and a well-thought learning approach. The actual delivery of entrepreneurship courses is largely taken care of by some 200 entrepreneurs and practitioners (entrepreneurs, venture capitalists and business angels, bankers, etc.). CfEL was established in 2003 from the division of two units formerly belonging to the University of Cambridge Entrepreneurship Centre founded in 1999. Teaching and training moved to CfEL (part of Cambridge Judge Business School), and Cambridge Enterprise became the office for university-industry relations and knowledge transfer alongside with the Technology Transfer Office and the University Challenge Fund.

CfEL has nine full-time staff to plan and organise entrepreneurship courses, including a director, programme managers, a centre manager and administrative staff. Activities. All activities aim at developing self-confidence and self-efficacy amongst students. Entrepreneurship is understood as a set of skills, attitudes and behaviours rather than just venture creation. Teaching methods range from lecturing, video and online assignments, to problem-based learning, project work on real technologies, entrepreneurs in the classroom. A broad recruitment package includes a website, brochures, posters, and a series of information events. Close collaboration with the different departments allows circulation of information to student mailing lists and the organisation of tailored information events. The main strength of CfEL is its clear focus on the development of entrepreneurial skills, attitudes and behaviours through an entrepreneurial pedagogy. This means focusing on soft skills (developing student self-confidence, self-efficacy, helping students to understand the why and the when of becoming an entrepreneur, learning to deal with uncertainty, learning by trying, trial and error, learning from mistakes and failures) instead of to a 'how to approach' that emphasises business administration skills and tools to develop a (successful) business plan.

*Source* : OECD 2010b.

Entrepreneurship education might be linked to a particular entrepreneurial ecosystem and its opportunities. Nevertheless, much can be achieved by collaboration, also across administrative border. A joint resource centre could, for example, provide in form of an on-line system information on pedagogical practices freely accessible for teachers, researchers, students and other organisations involved in entrepreneurship education. An example of such a joint resource centre is the French Observatory of Pedagogical Practices in Entrepreneurship that produces innovative and pertinent teaching material (case studies, videos, games, course contents, syllabi, etc.), and organises regular networking events.

### Box 2. The French Observatory of Pedagogical Practices in Entrepreneurship

The Observatory of Pedagogical Practices in Entrepreneurship, *Observatoire des Pratiques Pédagogiques en Entrepreneuriat* (OPPE), functions as resource centre for professors, educators, higher education institutions and entrepreneurship support structures. Its main goal is to promote and enhance an entrepreneurial spirit within the education system OPPE is an information data base on entrepreneurship education in secondary and higher education that facilitates development of and learning from good practice in teaching methods, contents and pedagogical tools.

OPPE was founded in 2001 by the French ministries of research, education, economy, industry and SMEs, the French Agency for the Creation of Enterprises, *Agence pour la Création d'Entreprise* (APCE), *Académie de l'Entrepreneuriat*, the academic association of entrepreneurship, DIESE, the French external corporate venturing association, and universities, engineering and business schools, such as CPU and CDEFI. The conceptual development phase lasted for two years and included intensive collaboration between. The annual budget is approximately EUR 150 000; two full-time staff are involved. Scientific working groups exist in various fields and benefit from the contribution of numerous professors.

OPPE provides on-line information on around 300 entrepreneurship education initiatives in higher education, more than 100 entrepreneurship education actions in secondary education and 30 initiatives that involve secondary and tertiary education institutions. Also, more than 30 on-line pedagogical tools are downloadable. On a yearly basis, OPPE organises conferences to generate and develop new pedagogical ideas and to facilitate networking amongst professors, educators and other stakeholders; on average 150-200 people attend these events. OPPE also manages relationships with international structures dealing with similar topics such as *FREE pour entreprendre* in Belgium and *OFQJ*, a French-Québécois initiative for education and skills development of the 18-35 years-old. For researchers OPPE offers more than 300 online academic references on entrepreneurship education as well as a specific research area on the entrepreneurial intentions of students.

OPPE has contributed to greater attention to and take up of entrepreneurship education in secondary and tertiary education institutions. Political leadership was crucial for establishing and promoting strategic embedding of entrepreneurship promotion in education. The partnership of education institutions and entrepreneurship support providers helped to advance integration of entrepreneurial mindset creation, skills development and business start-up support.

Source : OECD 2010a.

Regularly organised entrepreneurship educator development programmes and workshops, careers adviser awareness programmes, and faculty deans' and directors' development programmes and workshops promote a university's entrepreneurial spirit. In the United States, the Price-Babson Symposia for Entrepreneurship Educators' (SEE) programs is held every spring on the Babson campus. Cross-disciplinary educators from around the world are invited to attend and the program is designed to build an international cadre of educators who understand the importance of combining entrepreneurship theory and practice in teaching.

The Danish government created in 2004 the International Danish Entrepreneurship Academy (IDEA), entirely focused on entrepreneurship teaching in higher education with 38 universities and colleges as IDEA partners and the participation of a wide range of faculties. IDEA runs an International Master in Entrepreneurship Education and Training (IMEET) and a Diploma Course for Entrepreneurship Teachers.

**Box 3. Educating educators and training trainers at Aarhus School of Business**

The International Master of Entrepreneurship Education and Training (IMEET) is not a traditional degree in entrepreneurship. It is a top-level practice in teaching the entrepreneurship teachers, providing a solid knowledge of entrepreneurship and the pedagogical competencies to teach entrepreneurship. IMEET, initiated by IDEA, the International Danish Entrepreneurship Academy, is based at Aarhus School of Business and is developed and offered in partnership with European higher education institutions. Key partners are Copenhagen Business School, Helsinki School of Economics, University of Southern Denmark, the Danish University of Education, Kingston Business School and the University of Rostock.

IMEET's mission is three-fold vision: (i) facilitating a first-class learning forum for educating an elite of teachers, trainers and consultants in entrepreneurship in Europe; (ii) creating a network-based faculty of prestigious international partners consisting of teachers and researchers dedicated to the development of best practices and advancing competence in and mastering of entrepreneurship learning methods; and (iii) giving birth to a new generation of change agents promoting the agenda of entrepreneurship in teaching and consulting.

The Master programme is organised in four semesters with six modules and a master project for a total of 60 ECTS. A scientific advisory board of internationally highly-renowned experts in entrepreneurship education develops the curriculum. The first programme was organised in 2007 at the University of Aarhus with 18 students from Denmark, the Netherlands, and the United Kingdom. All of them were educators at higher-educational institutions, business advisors or consultants. Teaching and pedagogical module development topics include: Fields for Learning Entrepreneurship, Creativity and Enterprising behaviour, Experimental situated learning, and Project Work. Teaching sessions are planned to take place in Denmark, United Kingdom, Finland and the Netherlands.

IMEET is an important instrument to create a pan-European network of entrepreneurship education experts with the capabilities to develop and deliver entrepreneurship skills programmes, and to innovate business advisory services. It is a timely response to a widely acknowledge dearth in Europe of qualified human resources and innovative methods in teaching students, engaging in research on entrepreneurship education issues and advising or supporting nascent entrepreneurs and established firms.

*Source* : OECD 2010a.

**4. Start-up support**

The number of universities that have established dedicated 'internal' start-up support services is growing. Common is the existence of single units, often referred to as Entrepreneurship Centres, that centralise and steer a multitude of support services that offer would-be entrepreneurs and those already in the start-up process consultation and access to networks and premises.

Universities can create a protected environment for nascent entrepreneurship. This can be an important stimulus for students and researchers to make a first step towards the creation of a venture. Yet, in order to avoid 'over protection', early exposure to market conditions is advisable.

**Table 2. Criteria of good practice**

1. Entrepreneurship education activities and start-up support are closely integrated.	Start-up support is providing a helping hand in business start-up without taking away the 'do it on your own'. It is all about making, entrepreneurship support systems accessible and attractive for future entrepreneurs, and about rectifying market and system failures in financing and premises. A key success factor lies in private sector collaboration. Through their start-up support – even more than in the case of entrepreneurship education – universities are opening up to 'external actors'. Besides addressing eventual university governance issues, a concerted approach is needed to take stock of the range of activities, the people behind and the resources devoted, to identify areas of overlap as well as potentials for synergies and untapped resources.
2. Team building is actively facilitated by university staff.	
3. Access to private financing is facilitated through networking and dedicated events. Mentoring by professors and entrepreneurs is offered.	
4. Entrepreneurship support in universities is closely integrated into external business support partnerships and networks, and maintains close relationships with firms and Alumni.	

Source : OECD (2010a,b).

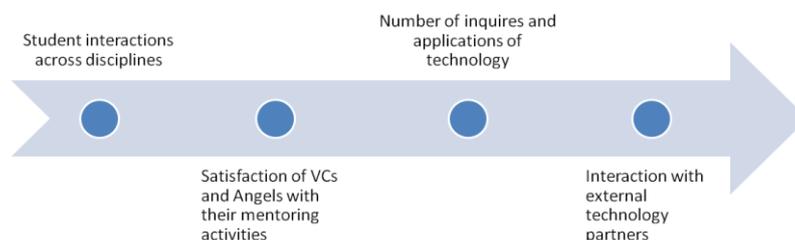
The aim of linking start-up support provided by universities with the wider enterprise creation support in a territory is to develop a shared and well-communicated vision and a common strategy to promote graduate entrepreneurship. Ideally such a strategy is linked with the wider economic development strategy, and incentives for synergies at project level exist, in order to alleviate goal conflicts and tensions in the system. An example of such a concerted approach is entrepreneurship support provided by Rensselaer Polytechnic Institute.

***Example: The multi-actor centre of gravity for entrepreneurship support in Rensselaer Polytechnic Institute***

Rensselaer Polytechnic Institute (RPI) is the oldest engineering research university in the United States located in Troy, NY. Entrepreneurship is considered a way of life that springs from fundamental education and research programs. RPI's educational programmes work to infuse understanding and encouragement of entrepreneurship through all schools and programmes. There is a high degree of collaboration with entrepreneurship support actors in Troy.

The entrepreneurship support ecology at RPI seeks alleviate these barriers by nurturing commitment by all those involved, technologists, financiers, management, and entrepreneurship faculty to develop a university wide effort for entrepreneurship that is connected with the rest of the entrepreneurship support system in Troy. Within each School there are at least two faculty members, who are respected by their peers for high quality research and teaching and who champion the entrepreneurial cause across the university. These people meet on a regular basis to discuss new initiatives, propose new research grant opportunities, and advocate privately and publically for entrepreneurship within the university and in the Upstate New York Region. They are the centre of gravity for other entrepreneurship-interested scholars from universities and colleges in the region.

### Evaluation practice in Rensselaer Polytechnic Institute



An evaluation system to measure the performance of entrepreneurship support activities and people involved is in place and includes several measurement criteria. First, is the quality of the interaction between management students and technology students. Using questionnaires, the quality of the experience that students have in their interactions across the disciplines are assessed annually. Second, is the satisfaction that Venture Capitalists and Business Angels have with their mentoring activities. The quality of their interaction is imperative to the development of the programme. Again, questionnaires are utilised to develop a quantitative assessment of these interactions. Third, is the activity in the Office of Technology Commercialisation (OTC). Better interactions with the university research community will improve the flow of technology to the OTC and the interest in technologies that currently exist in the OTC. The number of inquires and applications of technology from the OTC are utilised as the chief measure of success. Finally, the interaction with RPI's technology partners and funding providers foster a system that commercialises more student and faculty operated ventures. Therefore the number of spin-offs over a five year period is used as evaluation criteria.

## 5. Key policy issues in promoting graduate entrepreneurship

Support systems for graduate entrepreneurship include both university internal and external actors. The aim should be to develop a shared and well-communicated vision and to implement a joint strategy. A concerted approach is needed to take stock of the range of activities, the people behind and the resources devoted, to identify areas of overlap as well as potentials for synergies and untapped resources. Improving information flows between academics, university administration and partners is crucial and is likely to go along with a reduction of administrative requirements and excessive bureaucracy – which will require the support of university top management and facilitative rewards and training.

Entrepreneurship education should be organised in dynamic ways that take into account real-business needs and students interests. To ensure this, regular evaluation exercises are needed including students, teachers, and the local business community. Across OECD countries, more and more universities follow the approach of assigning a member of the top-level university management to take over responsibility for the development of entrepreneurship education and start-up support, including goal and policy definition, degree of curricular integration, resources, dedicated research and evaluation, enhances the role entrepreneurship in relation to teaching and research. To create a broad basis for this the establishment of a 'strategic' committee, including all the key people acting within and outside the university has proven to be a successful approach in joining up different interests into a common mission.

### ***Investing in students...***

Students can add immense value to entrepreneurship support if given the opportunity to act. Yet they are often considered the 'beneficiaries' and not as partners in, and creators of entrepreneurship support. There are a number of ways to mobilise students as partners in the design and delivery of entrepreneurship education and start-up support. Student run entrepreneurship clubs, such as CUTECH, Cambridge University Technology and Enterprise Club, 'Start-Up Cafe' initiatives on campus, and the introduction of paid student entrepreneurship interns, which work across campus to promote and support entrepreneurship actions and to carry out applied entrepreneurship research, are examples. An important instrument, which is not yet used to its full possibilities, is the Internet and social media, such as Facebook Twitter, Linked-In, etc.

### ***...and in teachers***

Teachers are important. Their knowledge, experience and attitudes with regard to entrepreneurship and the entrepreneur as a person matter. Academics and university administrators are often not the best teachers when it comes to 'business' matters. A reinforcement and development of existing human resources, employing new staff and collaborating with entrepreneurs and practitioners in business support is thus needed.

In this handbook we presented an overview of the opportunities and challenges in building strategic partnerships to promote the birth, survival and growth of graduate firms. The following summarises the key issues.

**Table 3. Key issues**

<i>Strategy and resources</i>
There is clear role for public policy in 'opening up' universities towards their 'third mission', which ideally should be part of their key missions – research and teaching. Clear incentives and rewards are needed for professors, researchers and students to engage.
Public kick-off funding for entrepreneurship support infrastructure is common to many OECD countries. Yet, it is the balance between a minimum long-term financing for staff costs and overheads and strategic partnerships with business support providers and the private sector that prove to be successful.
<i>Support infrastructure</i>
Networking and incentives for clear referral systems between university internal and external support services are crucial for increasing their effectiveness and efficiency.
<i>Entrepreneurship education</i>
The exchange of good practice in creative teaching methods enhances improvement and innovation. Entrepreneurship education is demanding a reinforcement of human resources hiring and collaboration with 'externals' and continuous training. The involvement of externals should be well integrated into the course programme and not just <i>ad hoc</i> or a response to staff bottlenecks.
<i>Start-up support</i>
A key success factor for university entrepreneurship support lies in strategic partnering with business support providers and private sector in general. Universities can create a protected environment for nascent entrepreneurship. This can be an important stimulus for students and researchers to make a first step towards the creation of a venture. Yet, in order to avoid 'over protection', early exposure to market conditions is advisable.
<i>Evaluation</i>
All partner organisations will need to work 'hand in hand' in developing a monitoring and evaluation system which demonstrates the socio-economic impact of university entrepreneurship support and reveals needs for changes.

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PRINTED IN FRANCE, 2011

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