

## Chapter 5

### Entrepreneurship Education in Europe

by

**Karen Wilson**

*European Foundation for Entrepreneurship Research*

*This chapter assesses the state of entrepreneurship education in higher education institutions (HEIs) in Europe, comparing it to developments in the United States and outlining a set of recommendations for universities and policy makers. Comparisons include the differences in definition between entrepreneurship and SMEs, multidisciplinary learning, academic and business links, quality entrepreneurship curricula, and the role of entrepreneurship within the university. Europe has the opportunity to learn from models around the world and focus on integrating the most relevant and high-quality practices into higher education institutions. Europe's competitiveness, innovation and economic growth depend on being able to produce future leaders with the skills and attitudes to be entrepreneurial in their professional lives, whether by creating their own companies or innovating in larger organisations. Entrepreneurship education is the first and arguably the most important step for embedding an innovative culture in Europe.*

## Introduction

Can entrepreneurship be taught? It's an age-old debate. The answer is both yes and no. Education plays an essential role in shaping attitudes, skills and culture – from the primary level up. Entrepreneurship education provides a mix of experiential learning, skill building and, most importantly, mindset shift. Certainly the earlier and more widespread the exposure to entrepreneurship and innovation, the more likely it is that students will consider entrepreneurial careers at some point in the future.

What do we mean by entrepreneurship? There are many working definitions but for the purposes of this chapter, entrepreneurship is defined as “the pursuit of opportunities beyond the resources you currently control” (Stevenson, 1983, 1985; Stevenson and Jarillo, 1991). Entrepreneurship is about growth, creativity and innovation. Innovative entrepreneurs come in all shapes and forms. They start companies; they spin out companies from universities or corporations; they restructure companies in need of refocusing; they innovate within larger organisations. Usually they share a primary objective – growth.

Europe has an opportunity to learn from experiences in the United States, Canada and other countries around the world and to set up appropriate models, rather than importing models that might not apply to the European context. When assessing entrepreneurship education practices around the world, it is important to understand not only what works but also why. It is not simply a matter of building the infrastructure. The programmes must be market-driven and adapted to the local ecosystem.

This chapter assesses the state of entrepreneurship education in higher education institutions (HEIs) in Europe in comparison with developments in the United States, and outlines a set of recommendations for universities and policy makers. The analysis is based on the work conducted by the European Foundation for Entrepreneurship Research (EFER) over many years, as well as other recently published papers on the topic.

## Current entrepreneurship policy challenges in Europe

In the United States, entrepreneurship has historically been a key driver of economic growth. In the past several decades, entrepreneurial dynamism has been evident both in the number of new enterprises created each year and in the fact that, of the leading 100 United States firms, the majority did not exist 20-30 years ago. The process of renewal, in which old companies evolve or go out of business and are replaced by more dynamic firms, is

important for the vitality of economies (Birch, 2002). In Europe, many of the leading companies have existed for almost a century.

Europe needs a greater focus on entrepreneurship and innovation to help spur competitiveness, growth and job creation, and to achieve the goals set out in the Lisbon Agenda (European Commission, 2000). Despite numerous initiatives and programmes, Europe is still lagging behind these goals (Kok, 2004). Underlying issues include the mindset and skills of young people (European Commission, 2002). The low exposure to entrepreneurship combined with the lack of role models and the repercussions for failure, makes the barriers to entry in Europe significantly higher than in North America. On the other hand, there is too much focus in Europe on SMEs instead of growth entrepreneurship. Companies are not encouraged to expand internationally, and administrative and financial complexity still burdens cross-border activity within Europe.

### ***How can Europe reinvigorate dynamism through entrepreneurship?***

Entrepreneurship education can help promote an entrepreneurial and innovative culture in Europe by changing mindsets and providing the necessary skills. With the security of Europe's welfare system, people are less willing to take risks. This attitude is reinforced at the university, which traditionally has been focused on ensuring students can secure future jobs – not become entrepreneurs. Meanwhile globalisation, the rapid development of technology and the lower cost of travel have completely changed the nature of work. It is no longer enough to train students for a career. Universities must prepare students to work in a dynamic, rapidly changing entrepreneurial and global environment.

For entrepreneurship to thrive, it must operate in a well-functioning business and regulatory environment. Without the proper framework conditions, even potential entrepreneurs wanting to start companies will not do so. In the United States, business innovation is fuelled by highly competitive markets, advanced financial and university infrastructure, property rights, labour flexibility, and government support of R&D, directly and through procurement (Dennis, 2006). Carl Schramm, President and CEO of the Kauffman Foundation, has written extensively about the unique multifaceted system for nurturing high-impact entrepreneurship in the United States and provides many valuable insights for other countries (Schramm, 2004).

Entrepreneurship is viewed as a major driver of innovation, competitiveness and growth. National governments and international

organizations such as the OECD, the European Commission and others have increased focus on entrepreneurship education. The OECD recently conducted a major survey of entrepreneurship education, and the European Commission is about to embark on a major study as well. These initiatives bode well for ensuring sustained momentum to encourage universities to make commitments in this area and for policy makers to help facilitate the process.

### **Analysis of trends**

Entrepreneurship has been part of the curricula in higher education institutions in North America for over fifty years. The first graduate course in entrepreneurship was offered at Harvard University in 1948 (Katz, 2003) by Professor Miles Mace. Soon after, legendary Harvard Business School Professor Georges Doriot originated the concept of venture capital. Today, entrepreneurship courses are offered at most universities across the United States. The demand has been driven by the students themselves, who are eager to take courses ranging from business planning and start-up to entrepreneurial finance and technology management.

In Europe, entrepreneurship only substantially began to enter the curriculum in the last ten years, although a handful of institutions started earlier (Twaalfhoven and Wilson, 2004). This is in line with other trends, most notably the growth of the venture capital industry to finance innovative, growth-oriented companies. In the United States, the venture capital industry started more than forty years ago and began to take off in the 1980s. In Europe, significant growth in venture capital began only about a decade ago, in the mid-1990s.

### ***Entrepreneurship versus SMEs***

One of the main differences between entrepreneurship education in the United States and Europe is the definition and focus of “entrepreneurship”. In the United States, entrepreneurship generally refers to growth-oriented ventures or companies, while in Europe it is often equated with SMEs. Just because a firm is small, that does not make it more entrepreneurial than a large company. Europe has a legacy of small and medium-sized business, many of them family-owned. These companies play a large and important role in the European economy. However, study after study has demonstrated that the majority of SMEs in Europe are not growth-oriented at all. Only a very small percent, 3% according to Professor David Birch, are high-growth-oriented – or, as he calls them, “gazelles” (Birch, 2002). While all

companies should be encouraged, it is the growth-oriented ones that will have the most impact on economic dynamism.

This definitional difference means that in Europe, many “entrepreneurship” programmes are actually SME training programmes that focus on functional management skills for small business (Zahra, 2005) rather than skills for building, financing and nurturing high-growth companies.

### ***Entrepreneurship within the university***

Another key difference is the place of entrepreneurship within the university and academia more broadly. While entrepreneurship is still not fully accepted as an academic discipline, in the United States many business and technology schools have created a niche in this area and growing numbers of US schools are offering “concentrations” or “majors” in entrepreneurship (Twaalfhoven and Prats, 2000). Many US universities have academic entrepreneurship departments and a large percentage of schools offer entrepreneurship courses.

In Europe, entrepreneurship is still trying to find its home. Activities are in place across Europe but efforts are fragmented and often driven by external actors instead of by the education system itself (European Commission, 2002). Faculty champions of entrepreneurship often have to fight internal battles for support and funding of their activities. Fewer universities in Europe have academic entrepreneurship departments. Professors often teach from traditional disciplines such as economics or business administration. Also, the majority of the entrepreneurship professors in Europe are traditional academics, reflecting long-standing policies and practices.

Institutional culture, practice and policies often get in the way of developing an entrepreneurial spirit and environment within universities. Entrepreneurship champions play critical roles within the universities but there must also be strong commitment from the university leadership (provosts, rectors and vice chancellors). This requires a complete paradigm shift for the entire university, including changing the fundamentals of how the university operates and its role in society.

### ***Multidisciplinary learning***

Another key difference between Europe and the United States is the way universities view education. The world is not divided into functional silos, so the educational process should not be either. In a number of US

universities, entrepreneurship is treated as an integral part of a multidisciplinary education process. Students are encouraged to take courses and engage in projects with students from other disciplines, enabling them to draw upon expertise from across the university – engineering, science, design, liberal arts and business. The universities strive to minimise the institutional barriers to this cross-fertilisation to provide the most creative and innovation learning process possible. The result is a dynamic team- and project-based learning environment.

The Kauffman Foundation, which with an asset base of USD 2 billion is the largest foundation in the world focused on entrepreneurship, is encouraging the integration of entrepreneurship across entire campuses. The Foundation has selected “Kauffman campuses” in the United States and is supporting those schools’ efforts to create cross-campus, cross-disciplinary entrepreneurship programmes to instil entrepreneurial thinking in all disciplines.

Even on campuses with less of an interdisciplinary approach, US entrepreneurship programmes often connect traditional business courses with those offered in science and technology programmes. This allows for the sharing of expertise and knowledge between the business and technical students, sparking greater innovation and facilitating technology transfer. Increasingly this approach is spreading across Europe, with great examples provided by the University of Cambridge as well as a number of other institutions across Europe.

### ***Academic-business links***

Other differences lie in the attitude and approach to teaching. In the United States, entrepreneurship education is very closely linked with business practice. Professors often have experience working with start-ups. Entrepreneurs, many of them alumni of the university, are both brought into the classroom to speak to students as well as to teach courses. These courses are structured to be as experiential as possible, incorporating real-life cases, projects, internships and business plan competitions. Case studies also provide role models for students considering an entrepreneurial career path. This is an important part of creating entrepreneurial drive: if students see that people “like themselves” were able to successfully create companies, it helps to demystify the process and make that option more feasible.

While interactive approaches, usually project-based, are also used in Europe, most entrepreneurship courses are still taught by the lecture method. Case studies are sometimes utilised but they are rarely focused on European entrepreneurs as potential role models. More European case studies, featuring successful entrepreneurs, need to be developed and shared broadly

through schools across Europe. More could also be done to profile these entrepreneurs in the media to create a broader exposure to such role models.

In the United States, the university is seen as playing a key role in the local ecosystem, in which links between academia and business operate both formally and informally. US universities foster networks with entrepreneurs, business practitioners, venture capital firms and business angels as part of a mutually reinforcing learning and sharing process. In Europe, most universities are government funded and, in many cases, they lack the experience and incentives to initiate proactive outreach with the private sector. Government-funded universities tend to have very traditional structures making it more difficult to integrate new approaches. In addition, they tend to be more nationally focused than internationally minded by nature of their funding base.

However, there is a change afoot in Europe, with a number of institutions, particularly in the United Kingdom, Ireland, Spain and other countries playing a more active role with the local business community and engaging entrepreneurs as well as alumni.

### ***Quality entrepreneurship curricula***

The proliferation of entrepreneurship programmes in the United States and increasingly in Europe has been positive in terms of validating interest in the field, but more depth and rigor is needed to ensure that entrepreneurship courses, materials and research are of high quality. Research and curriculum development are of particular importance in helping to ensure entrepreneurship's rightful place among the academic disciplines. The Kauffman Foundation has been focusing on this issue and recently set up a multidisciplinary panel of distinguished scholars to provide recommendations on the core elements necessary for a high-quality, university-level entrepreneurship programme.

Universities in Europe are undergoing tremendous change through the implementation of the Bologna agreement, which aims to create more standards among institutions of higher education by 2008. During this process, curriculum content must be rapidly overhauled as well and geared towards developing problem-solving skills, which are greatly needed in today's knowledge-based society. Educational systems and teaching methods must move from traditional to more creative, interactive, student-centred learning methods (EUA, 2005).

The Bologna process is an opportunity for European universities to leverage the reform process to make their institutions more innovative and entrepreneurial. Perhaps it can also open the door for more radical changes,

including the way in which they manage the institution the faculty they hire, the programmes they teach, the flexibility with which they incorporate new topics and the way they teach them, and the students they attract.

### **Opportunities and challenges for entrepreneurship education in Europe**

European universities and business schools must play a key role in promoting entrepreneurship and innovation, helping students learn not only how to start but also how to grow enterprises, including across borders. In particular, technical and scientific universities provide potential breeding grounds for high-technology/high-growth companies or “gazelles”.

The European Foundation for Entrepreneurship (EFER) has conducted many surveys and research on entrepreneurship education and research in Europe. In 2004, EFER conducted a joint survey with the European Foundation for Management Development (EFMD). The goals of the survey were to gain a perspective on the level and growth of entrepreneurship education in Europe, identify trends, and understand the training and development needs of faculty teaching entrepreneurship. The results were used as a basis of comparison with other recent surveys and research conducted in Europe and the United States. EFER’s conclusions are outlined below.

#### **Box 5.1 The European Foundation for Entrepreneurship Research**

The European Foundation for Entrepreneurship Research (EFER) fosters and promotes research and teaching in the field of entrepreneurship at institutions of higher education across Western and Eastern Europe. EFER was founded by Harvard Business School alumnus Dr. Bert Twaalfhoven, experienced entrepreneur and long-time promoter of entrepreneurship in Europe, and has received support from numerous other HBS alumni, banks, venture capital firms, universities, entrepreneurs and international organisations over the years.

Since it was founded in 1987 EFER has conducted research studies comparing entrepreneurship in the United States and Europe, and generated support for 50 European case studies. EFER initiated “Teach-The-Teachers” programme in the early 1990s. The first programmes were in Western Europe; they were followed by a series of programmes in Central and Eastern Europe. Most recently, EFER has partnered with Harvard Business School in creating an intensive training programme for European professors of entrepreneurship. Through these programmes, EFER has focused on building linkages between academia and students in Eastern and Western Europe.

Entrepreneurship education in Europe has grown significantly in the past 5-10 years, and strong growth is expected to continue. More needs to be done however, particularly in the following areas: curriculum development, creation of a critical mass of entrepreneurship teachers, funding of entrepreneurship, cross-border faculty and research collaborations, and facilitation of spin-outs from technical and scientific institutions.

### *Curriculum development*

Greater clarity is needed regarding the purpose and goals of entrepreneurship education. These should be based on a broadly defined set of outcomes, not just on a narrow measurement of the number of start-ups created from universities. Entrepreneurship education is about developing attitudes, behaviours and capacities at the individual level. It is also about the application of those skills and attitudes that can take many forms during an individual's career, creating a range of long-term benefits to society and the economy. Measuring intangible outcomes is difficult. However, applying only simple measures of the potentially wrong things can result in falling far short of the intended outcomes and impact.

Entrepreneurship and innovation must be deeply embedded into the curriculum to ingrain a new entrepreneurial spirit and mindset among students. In Europe, entrepreneurship tends to be offered in stand-alone courses rather than being integrated in the content of courses in other departments or disciplines. The main exceptions are within institutions that have been teaching for longer periods. This indicates that until there is enough focus and critical mass of entrepreneurship knowledge and material within an institution, it will be difficult to leverage that content into other courses. Entrepreneurship also remains primarily elective at European universities.

Entrepreneurship education is important in all disciplines. In Europe, the majority of entrepreneurship courses are offered in business schools. Entrepreneurship needs to be expanded across the campus – particularly to the technology and science departments, where many innovative ideas and companies originate. While most business students do not start or join a new business upon graduation, statistics show that the majority in countries such as the United States do so during later stages of their careers. Therefore, exposure to entrepreneurship as well as practical training in starting and growing companies is important. Technical and scientific universities, on the other hand, are potential sources of start-ups and spin-offs. Increasingly, business and technical faculties are linking efforts to encourage the exchange of skills and ideas among students.

A range of entrepreneurship research and teaching topic areas are being addressed in Europe, including start-up/business planning, SME management, family business, business strategy, innovation (both technology and science), policy, gender/minority issues, and socially responsible entrepreneurship. At the same time, there has been a proliferation of business plan competitions and other initiatives and programmes focused on the start-up phase. Students need to learn how to manage and grow enterprises, not just how to start them. Many respondents to the 2004 EFER/EFMD survey commented that the heavy focus on the start-up phase may be overshadowing the more important trends in entrepreneurship.

In Europe, case studies and other interactive pedagogy are underutilised, as is the inclusion of business people and entrepreneurs in the classroom. Almost half of all materials used in the entrepreneurship courses in Europe are generated locally, as faculty teach with a mix of lectures as well as formats that do not use conventional course materials. Greater emphasis needs to be placed on experiential and action learning. There are numerous pedagogies that can be utilised, including case studies, team projects, and activities with entrepreneurs. Using active learning methods is more complex than traditional teaching methods. It requires engaging students more deeply in the learning process. Educators therefore must be able to create an open environment of trust, in which students develop the necessary confidence to take risks.

### ***Creating a critical mass of entrepreneurship teachers***

There are increasing numbers of entrepreneurship faculty at institutions across Europe; however, the numbers are still far below that at US institutions. As demand from students in Europe continues to grow, the demand for universities to provide quality entrepreneurship programmes will also increase, requiring more professors dedicated to the field.

According to the EFER/EFMD survey, there was an average of approximately five professors involved in entrepreneurship activities at each institution with entrepreneurship programmes in 2004, up from the reported average of 2.5 in an EFER survey conducted in 2000 (Twaalfhoven and Prats, 2000). Many of those professors also teach in other disciplines, not just entrepreneurship. In addition, in many European faculties entrepreneurship teaching is on the shoulders of part-time or visiting lecturers. This means that there is still a lack of critical mass of entrepreneurship professors at many universities across Europe. That makes it difficult not only to sustain entrepreneurship efforts over the long term,

but also to allow time for entrepreneurship research and course development.

Europe lags behind the United States by a factor of four in terms of entrepreneurship chairs. By 2004 there were more than 400 chairs of entrepreneurship in the United States (Katz, 2004). In Europe, the figure was closer to 100. When comparing the total number of entrepreneurship professors, the gap widens significantly further.

It is evident that Europe needs to invest in the training and development of entrepreneurship professors and researchers. Survey respondents indicated a need for training programmes and workshops in areas such as case method teaching and other action-oriented innovative approaches. A European Commission expert group on education and training for entrepreneurship also found that the “provision of specific training for teachers on entrepreneurship is insufficient” (European Commission, 2002).

Currently, there are very few entrepreneurship doctoral programmes in Europe. Short-term training programmes and workshops are valuable but long-term solutions are also needed to enable Europe to build a pipeline of high-quality, well-trained entrepreneurship professors. A recent European Commission communication on “Fostering Entrepreneurial Mindsets through Education and Learning” (European Commission, 2006) highlighted the need to tackle the shortage of entrepreneurship professors by making entrepreneurship more broadly recognised as a specialisation for doctoral programmes.

The current pool of entrepreneurship teachers should be expanded. Entrepreneurs and others with entrepreneurial experience should be allowed, encouraged and trained to teach. It is vital to create a critical mass of entrepreneurship educators able to create the right learning experiences for students. Growing the base of experienced educators not only means providing the necessary training and education; it also requires expanding the definition of “educators” beyond professors to include entrepreneurs and other practitioners. These individuals also serve as role models, particularly if they are alumni of the school, as well as coaches and mentors. They also enhance entrepreneurial spirit within the university, and create stronger links between the university and the local community.

### ***Funding entrepreneurship***

In the United States, many universities have entrepreneurship centres and chaired professorships of entrepreneurship funded by external sources. In Europe, this is a relatively new phenomenon. Most of the funding for the centres and chairs in the United States is provided by successful

entrepreneurs who graduated from those institutions. According to research conducted for the Kauffman Foundation, the 400 chairs of entrepreneurship in the United States amount to approximately USD 1 billion (Katz, 2004).

In Europe the bulk of the funding still comes from governments, although this is beginning to change as companies and foundations have begun to contribute. There are a few examples of entrepreneurs funding centres or chairs but this is still relatively rare in Europe. In general, Europeans do not feel strong ties to their own universities, which are still seen as the realm of governments; and certainly there have not yet been enough successful entrepreneurs capable of giving back at that level. In addition, very few European universities track their alumni, making it more difficult to know which ones have become entrepreneurs, let alone engage them in the work of the school.

In 2004, there were well over 100 centres of entrepreneurship in Europe; however, they differ in size and scope. Most are connected to universities, but some are stand-alone centres collaborating with universities and businesses in the local area. Many centres were preceded by units or departments focused on entrepreneurship. While most of the entrepreneurship centres started in the past five years, some have existed for 20-30 years or more.

The main issue with government funding for entrepreneurship chairs and centres is sustainability. Most government funding programmes start well after the need presents itself and stop before the programmes can have the necessary impact. Unfortunately, it seems to be a common feature in Europe.

### ***Cross-border faculty and research collaborations***

More must also be done to facilitate faculty collaboration, exchanges and research across borders within Europe. While collaboration may be strong between universities within a given country, there is a large gap in cross-border activities among European countries. Currently, networks and working relationships between faculty teaching entrepreneurs across Europe are limited and there is little sharing of good practice.

Most of the 2004 EFER/EFMD survey respondents – 90% – indicated that they work at academic institutions in their home country and less than 20% spend time teaching outside of the country. Meanwhile, the student body is increasingly becoming international. Survey respondents indicated an international student average of 21% – more than double the percentage of “non-national” professors. If faculty themselves do not have international

experience, it makes it difficult for them to encourage students to take a pan-European or global perspective in starting and growing companies.

Greater mobility and exchange of experience is needed in Europe, not only between universities but also between academia and the business world. University exchanges could be both of short and longer-term duration. Short exchanges are easier to implement and provide much-needed international exposure and experience for the professors involved, often leading to longer-term engagement abroad. Longer-term exchanges allow educators to spend a significant amount of time at other institutions and/or in the private sector to truly engage, learn and develop, but these are more expensive and more difficult to implement. Europe needs more entrepreneurial learning models and greater sharing of knowledge and good practice across sectors and national borders.

At the undergraduate level, most entrepreneurship courses are conducted in the local language. At the postgraduate (MBA/masters) level, most of these courses are conducted both in the local language and English. At the executive education and doctoral levels, English predominates.

Certainly there are huge differences in university structures across countries in Europe, which makes both the sharing of best practices and cross-border collaboration more difficult. These difficulties are deepened by language and cultural differences. The Bologna reform process will be helpful but will not solve the difficulties of working across borders, cultures and languages. Increasing networks and working relationships between professors can help. What might start as an informal meeting or shared course could later turn into a research project or other academic and teaching collaborations.

An example is the programme offered by Harvard Business School called the European Entrepreneurship Colloquium for Participant-Centred Learning (EECPCL). Following a successful EFER pilot programme in 2001 that attracted 41 professors from 22 countries, EECPL was launched in 2005, attracting 173 professors from 36 countries across Europe over the past three years. Since the first programme, a number of professors have worked on joint projects and research. EFER is supporting those efforts by holding working meetings in Europe, for those who attended past programmes to encourage continued collaboration, faculty exchange and practice sharing. EFER is also planning to launch a faculty exchange programme to provide professors with exposure to teaching in other countries as well as to students with different backgrounds.

### *Spin-outs from technical & scientific institutions*

Innovation and R&D spur economic growth, competitiveness and employment, notably in high-tech, high-skilled and high-value areas of the economy. Europe has a tremendous asset in the strength of its technical and scientific universities. European universities provide some of the finest engineering, technology and science training in the world; however, the commercialisation of R&D is still in its infancy in Europe. While a number of European institutions have been proactive in this area, more needs to be done to encourage links between academia and the private sector, as well as the sharing of best technology transfer practices across Europe.

To foster technology transfer, scientific and technical universities should include modules on entrepreneurship; these would enhance awareness within the research community of the opportunities and modalities that exist to commercialise innovative R&D. Links with business school students and faculty as well as with the business community should also be encouraged. Venture capital firms can and are beginning to play a more important role in working with technical universities to structure and fund spin-outs.

Nurturing centres of R&D excellence in Europe is important as well. This includes attracting and retaining the most talented PhDs from around the world. The EU produces more science and technology graduates than the United States but does not leverage these potential resources. Many of the best and brightest move to the United States, where research budgets are larger and researchers are likely to get substantially higher pay.

For Europe to realise its global competitive potential, it will need to create a full ecosystem revolving around attracting and retaining the most talented researchers; encouraging links between universities and the private sector; enlarging the flow of technology transfers supported by efficient and effective intellectual property rights; and creating schemes to specifically support young innovative companies at the cutting edge of development (EVCA, 2005).

### **Policy recommendations**

The role of higher education in society is changing. No longer are universities expected to stay within their ivory towers. Today academia is expected to be equal partners to the private and public sectors alike. European university leadership should see this new role as an opportunity and leverage the Bologna reform process to make their universities more innovative and dynamic, in line with the goals of the Lisbon agenda.

A number of actions are necessary at the European, national, regional and local levels. Universities, policy makers and the business community need to work together to seize this opportunity to fuel the engine of the Europe's future growth by preparing young people to compete in a globally competitive and dynamic world.

Below are a series of recommendations following from the analysis of the opportunities and challenges in entrepreneurship education laid out in this chapter.

- Differentiate between programmes focused on growth entrepreneurship as opposed to SME management.

As long as the two concepts are mixed, progress will be difficult and well-intended public funds will be spent inappropriately. For maximum results, different initiatives should be targeted to:

1. General exposure to entrepreneurship, to change mindset and attitudes.
  2. Functionally oriented courses (SME management, etc.).
  3. High-growth-oriented entrepreneurship: how to build, finance and grow companies.
- Develop appropriate measurement and evaluation of the impact, not just outputs, of entrepreneurship programmes:
    4. Currently there is little evaluation of entrepreneurship education programmes and almost no statistical evidence, outside of some output indicators that may or may not be the right measures.
    5. Without clear objectives and measurement, support for programmes may be difficult to sustain.
      - a. As we have seen in the United States, entrepreneurship is a result of a long-developed cultural and education environment.
      - b. Europe has already had many “starts and stops”, and needs to take a much more sustained and long-term approach.
    6. Measures should focus on the local market needs and context.
  - Integrate entrepreneurship into the curriculum and build towards a multidisciplinary learning environment:
    7. Increase the number of schools offering entrepreneurship courses.
    8. Augment the number entrepreneurship courses and make them available to a broader group of students.

9. Make entrepreneurship a required course.
10. Integrate entrepreneurship across other courses.
11. Encourage cross-registration across disciplines.
12. Build projects and programmes across disciplines.
- Set high-quality standards for entrepreneurship curricula and research:
13. Ensure entrepreneurship courses meet an international quality standard.
14. Encourage the development of research-oriented entrepreneurship centres at universities across Europe.
15. Focus research and teaching on all of the entrepreneurial growth phases, not just the start-up phase.
16. Develop high-quality local content, case studies and course materials that can also be shared at the international level.
17. Create degree programmes, consistent with those at an international level.
18. Promote entrepreneurship as a legitimate academic discipline.
- Build a strong pipeline of European Entrepreneurship professors and teachers:
19. Hire more professors and teachers fully dedicated to entrepreneurship.
20. Look to recruit professors who also have entrepreneurship experience.
21. Support workshops and training programmes for teachers of entrepreneurship.
22. Provide training for entrepreneurs and other practitioners to become effective educators.
23. Review regulations on the participation of entrepreneurs in teaching activities.
24. Encourage the development of specialised entrepreneurship doctoral programmes.
- Encourage the use of interactive teaching methods in the classroom:
25. Promote the application of “learning by doing” through project-based learning, internships and consulting.
26. Leverage the uses of case studies for discussion-based learning.
27. Develop the proper incentives, assessment, rewards and recognition to encourage educators to try these approaches.

28. Involve entrepreneurs and local companies in entrepreneurship courses and activities.
  - Ensure a consistent and adequate level of funding for entrepreneurship education programmes:
29. Provide tax incentives to encourage donations to universities to support entrepreneurship programmes.
30. Seek private sector resources to help fund and provide expertise to entrepreneurship teaching and research.
31. Ensure that the initiatives funded are sustainable and provide the necessary funding to reach sustainability.
32. Encourage the development of local angel and venture capital funds.
  - Encourage cross-border entrepreneurship faculty and research collaborations:
33. Facilitate the sharing of good practice across borders, both within Europe and internationally.
34. Create opportunities for professors and researchers from various countries to work together on projects.
35. Provide support for European-wide and international mobility and exchanges of educators and researchers.
  - Facilitate spin-outs from technical and scientific institutions:
36. Advance core research and innovation in European universities and research centres.
37. Accelerate the application of science and technology to market through well-developed technology transfer offices.
38. Connect entrepreneurship and innovation programmes.
39. Establish stronger links between academia, business and entrepreneurs.
40. Provide the necessary fiscal incentives to encourage entrepreneurship.
41. Facilitate the provision of direct training and/or support programmes for entrepreneurs in the process of starting companies.
42. Ensure the time (sabbaticals, if necessary) for faculty to engage in entrepreneurial activities.
  - Profile European role models:
43. Create more public recognition vehicles for high-growth entrepreneurs through the media, awards, etc.

44. Support the development of more case studies profiling successful European entrepreneurs.

## **Conclusion**

The moment is right for a significant evolution of entrepreneurship education in Europe – between the growth of new private universities, the reform of existing universities as a result of the Bologna process, and the high level of interest in entrepreneurship by students, faculty, university administrators and policy makers.

Europe has the unique opportunity to learn from models around the world and focus on integrating the most relevant and high-quality practices into its higher education institutions. This should be a long-term commitment, however, not one that starts and then stops a few years later. Sustainability is a key issue. That means the objectives of these programmes should be clear from the start and outcomes should be measured to ensure that the intended results are being delivered.

Europe's competitiveness, innovation and economic growth depend on being able to produce future leaders with the skills and attitudes to be entrepreneurial in their professional lives, whether by creating their own companies or innovating in larger organisations. Entrepreneurship education is the first and arguably the most important step for embedding an innovative culture in Europe.

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