

Entrepreneurship teaching and training in Denmark:

Overview and policies*

Torben Bager, professor at the University of Southern Denmark and Managing Director of the International Danish Entrepreneurship Academy (IDEA)

Overall state of play in Denmark

1. General assessment

Entrepreneurship education has been high on the political agenda in Denmark for more than a decade. In 1995 the Danish parliament decided a strategy to promote entrepreneurship/innovation teaching at all levels of the educational system (Betaenkning 1301). However, implementation largely failed. The Danish Global Entrepreneurship Monitor report researched the situation in 2001 (report available at www.gemconsortium.org), concluding that Denmark according to expert interviews and population surveys were performing rather poorly at both the further educational level and at primary/secondary school levels in comparison with many other countries. However, the report and subsequent monitoring also concluded that growth could be observed in teaching efforts in the field, particularly at the high-school and college level, while teaching in primary schools and universities remained very weak. These reports led to establishment of a 'vision group' by the Minister of Education in 2001 which resulted in a number of new initiatives, among these a Ministry of Education supported portal for entrepreneurship teaching info (www.ivaerksaetter.emu.dk), establishment of a new public-private foundation for enterprising behaviour/self-employment in 2004 (in Danish: Selvstaendighedsfonden, encompassing Young Enterprise - Denmark) with its prime focus at the educational system at primary/secondary levels, and, the same year, formation of IDEA, the International Danish Entrepreneurship Academy, entirely focused at entrepreneurship teaching in higher education (38 universities and colleges are IDEA partners in December 2006, encompassing business as well as non-business institutions/faculties). The high political priority to the field was confirmed in 2006 by a high-level private-public council headed by the prime minister (www.Globaliseringsraadet.dk), suggesting a number of new initiatives. In January 2006 the Ministry of Education also launched a policy implementation report on these issues. These policy statements and plans have been accompanied in 2005 and 2006 by a number of new initiatives, generated or supported by IDEA:

- Development of an International Master Education for Entrepreneurship Teachers and Trainers (starting October 2007, organised by a consortium of Danish/European Universities),

* This document was prepared as part of the EU Project: Danish Report for EU Project: "Entrepreneurship in Higher Education, especially within non-business studies"



- Development of a Diploma Course for Entrepreneurship Teachers, aiming at post-graduate training of Danish teachers, particularly at college level (starting September 2007),
- A 1 year course program for teachers at high school level,
- New research/development projects on innovative pedagogy and didactics (incl. a Ph.D. project)
- New teaching materials such as text books, a programme for digital entrepreneurship cases and the development of advanced venture evaluation software.

A complete list of courses and educations at Danish universities and colleges in the field of entrepreneurship and innovation is available here:

<http://ivaerksaetter.emu.dk/lvu/uddannelse-samarbejde/kursusoversigt/>

What to teach?

2. Integration of entrepreneurship across the curriculum

Teaching efforts in the entrepreneurship field must consider a number of basic questions:

- What are the goals of the teaching effort, particularly whether to teach *about* entrepreneurship, *in* entrepreneurship or *for* entrepreneurship (or some combination),
- Which group(s) are targeted,
- What context is appropriate (e.g. entirely inside a college/university or partly outside),
- Which pedagogy and didactics is appropriate in order to achieve entrepreneurship learning goals as well as personal goals.

Danish universities have tended to focus at teaching *about* entrepreneurship as any other academic discipline, but are now increasingly acknowledging that they need to teach differently in this field, including training action competences and cross-disciplinary competences. Colleges generally – as they are not research based – tend to teach and train more *in* and *for* entrepreneurship.

Most Danish colleges and universities have introduced a start-up course, often organised as a business plan curriculum, in some cases supported by business plan competitions such as Venture Cup. Such courses involve introducing students to topics outside their specialisation, e.g. teaching technical students commercial topics. Also a number of Danish universities invite students from various faculties and educations to enter these courses and typically cross-disciplinary teams are formed to explore concrete business opportunities.

Business plan curricula are, however, increasingly disputed among Danish entrepreneurship scholars and teachers. Supported by new theory, such as 'effectuation theory' (www.effectuation.org) teachers



increasingly acknowledge the limits of the causal/planning perspective in a field dominated by effectuation/action logic.

While Danish institutions are quite strong in instrumental start-up teaching, they are much weaker in courses aiming at the ideation phase (generating ideas and exploring opportunities) and the post-start-up phase (growing, internationalising and consolidating a new firm/organisation).

Some Danish institutions have full educational programmes which entirely or substantially focus at entrepreneurship/innovation during an entire curriculum rather than just teaching – or offering - one or two courses. This is, however, at the moment only occurring within the business economy field. At technical colleges and the Danish Technical University, as well as at natural science faculties, one course or a few courses remain the standard – and they are seldom taught as cross-disciplinary courses.

My recommendation is the following:

- All further educations should introduce the entrepreneurship/innovation topic during the first study year to all students, including the self-employment perspective as a possible career choice; this could be integrated in study introduction programmes,
- Cross-disciplinary and cross-institutional courses should be promoted,
- More effort should be laid in teaching aiming at the ideation and growth stages,
- The planning approach (typical in business plan courses) should be complemented by action approach,
- Training of action oriented and creative competences should take place in many other areas than entrepreneurship. It is a question of how to teach rather than what to teach. Traditional lecturing, 'feeding' passive students, is largely inappropriate in this field and, more generally, an inefficient way of learning.

3. The specific content for different groups of students

Students in the humanities and the technical/natural science faculties should in this field more frequently be mixed with business students. The general experience from cross-disciplinary courses – and from the camp model involving innovative firms and cross-disciplinary students groups – is that students learn enormously from each other, and generally understand their own specific competences better when exposed to other disciplines. The entrepreneurship field is excellent for such learning.

However, technical/natural science students should also be offered special courses which focus on their specific technology rooted needs such as:



- commercialising technology based ideas,
- patenting and protecting technology based ideas,
- financing high-tech ventures,
- internationalising high-tech ventures,
- selling of technology based ideas/firms and MBO (spin-in and spin-off processes).

For students in humanities the following topics seem particularly relevant:

- social entrepreneurship,
- conceptualisation of new business ideas, incl. language and communication
- user driven innovation and anthropological methods,
- part-time and free-lance entrepreneurship.

4. Teaching content for various audiences (undergraduate, graduate and post-graduate)

The teaching content should basically contain the same elements at all levels, but, naturally, the theoretical component should be more advanced for graduates than for undergraduates. Gender and ethnic aspects can at all levels be included in the teaching on psychological and sociological dimensions (motivation topic and who-are-the-entrepreneurs topic).

How to teach

5. Overview of pedagogical tools and methods

IDEA undertook in 2005/2006 a survey among entrepreneurship teachers at Danish universities and colleges to explore the pedagogy and teaching methods applied. A total of 148 teachers and organisers of teaching activities responded.

The main result concerning ordinary ECTS teaching activities is reflected in table 1. The table demonstrates that there is a gap between methods applied today and methods which teachers see as appropriate. It is particularly evident that teachers want much stronger involvement of and with businesses and entrepreneurs, while they would like a reduction of traditional lecturing. The table also suggests that new computer based methods such as e-learning and practice oriented and energising methods such as role play ought to be applied more strongly.

Some teachers have clearly already adopted untraditional and innovative methods, with 25 % saying that they teach the field in a highly innovative way. However, many teachers also express some dissatisfaction



with the way they teach today. Only 20 % say that the way they teach this topic is different from the way they teach other topics, and 28 % state that the way they teach is inappropriate compared to learning goals.

The responses of the teachers demonstrate that many universities and colleges also engage students in extra-ordinary entrepreneurship teaching and training activities such as business plan competitions (Young Enterprise 24 %; Venture Cup 20%) and the organisation of short term innovation camps involving business people (28 %).



Table 1: Applied and appropriate teaching methods in the entrepreneurship/innovation field at Danish universities and colleges (score 1: used to large degree; score 4: not used)

Teaching Method	Applied today	Appropriate method	Gap
Project based teaching	1.67	1.26	+ 0.41
Lecturing	1.90	1.93	- 0.03
Group teaching	1.91	1.42	+ 0.49
Exercises	2.35	1.68	+ 0.67
Involvement of people with practical experience	2.38	1.30	+ 1.08
Collaboration with business people/enter-prises	2.49	1.34	+ 1.15
Internships	3.13	1.45	+ 1.68
E-learning tools	3.40	2.13	+ 0.73
Role play	3.48	2.11	+ 1.37
Laboratory work	3.74	2.28	+ 1.46
Computer simulation	3.83	2.14	+ 1.69
N	148	128	

Source: Majbritt Rostgaard Evald & Anne Kirketerp: Entreprenørskab ved de videregående uddannelser. IDEA, Kolding, Denmark (available at www.idea-denmark.dk)

6. Specific methodology and pedagogical tools in non-business studies

The way students in non-business studies learn is not different from others. They, too, need to be activated and energised through an appropriate package of modern methodologies rather than exposed to a high dose of traditional lecturing. Being exposed to the entrepreneurship area, however, and social science issues in general, may pose a particular challenge for these students as they are trained in finding the correct answer or solution to a problem. In the entrepreneurship field there are often many possible solutions, and no single correct one. Therefore class-room discussion must be encouraged – and the teacher has to change his or her teaching role and style from the authoritative knowledge-transfer role to the facilitator of student-learning-processes role.

7. Specific methodology and pedagogical tools in undergraduate, graduate and post-graduate levels



As the theoretical part has to increase as one move from the undergraduate level upwards, traditional lecturing is more appropriate at the higher levels than at lower. However, the general problem is that lecturing *about* entrepreneurship and using traditional lecturing tend to be too widespread at all levels at the moment.

8. The knowledge and experience of entrepreneurship professors

Most teachers in the entrepreneurship field have no or very limited practical experience from being entrepreneurs themselves. Particularly at universities it is very difficult to include practical business people in the permanent staff due to research criteria. Universities attempt to overcome this problem by two, often combined, approaches: the hiring of external, part time lecturers with business experience, and through collaboration with the world of business outside universities.

9. Involvement of entrepreneurs/people having started their own business

Such involvement is already there to some extent, but more is requested by entrepreneurship teachers. It should be a two-way process, with entrepreneurs from businesses (and also the voluntary and public sectors to some degree) being involved in teaching at the university/college, and students being involved in projects inside firms and organisations. Particularly promising methods are: 1. the camp model, with students, teachers and business people working closely together during e.g. two days to solve innovation problems, and 2. internships with students being 'adopted' during a longer period by a concrete firm or organisation.

10. Effective cooperation between higher educational institutions and enterprises

Effective cooperation requires a win-win situation for both parties. Students and teachers have something to contribute to enterprises, mainly based on theoretical knowledge, and enterprises have something to contribute to educational institutions, mainly based on practical knowledge. In order for higher educational institutions to benefit, the collaboration should be long term oriented, e.g. involving entrepreneurs and businesses leaders as mentors and advisors in the building of student hatcheries and incubators, or in the development of new entrepreneurship courses and study programs, including internship programs. For enterprises there should be some short term benefits, too, e.g. through involvement of student groups in innovation activities, particularly helping firms formulate and develop radical innovation ideas, and through connection to research activities. Taking these basic rules into consideration, close collaboration can also be established between SMEs and higher educational institutions.

11. The mobility of teachers and researchers

The mobility of teachers and researchers between educational institutions and businesses is generally low. In practice only few experienced entrepreneurs succeed in shifting to colleges/universities. They usually have to accept a lower income when they shift, and the route to a permanent position is long at universities.



The other way round, only few experienced teachers and researchers succeed in making a complete shift of career to the world of business. One route forward here would be to increase the number of part time positions such as external lecturer and adjunct professor positions. Another important route is the creation of a new category of positions at universities/colleges for well-educated academic staff with substantial entrepreneurial and business experience and limited research experience. Particularly at business schools this is important. Such double-faculty strategy is implemented at some American universities. At the technical and natural science departments and faculties the gap between the world of business and the world of research and teaching is less, yet difficult to cross.

12. Networks for sharing teaching practises and methodologies

One of the prime objectives of IDEA is to create such a network and knowledge sharing community among Danish entrepreneurship teachers in higher education. One important way to implement this task is through national and regional conferences for entrepreneurship teachers. An international IDEA conference is held once a year (in 2006 about 100 participants), a national IDEA teacher workshop is also held once a year (in 2006 about 60 participants), and a number of regional conferences and seminars is also held. Moreover, IDEA and Selvstaendighedsfonden (the public-private foundation for enterprising behaviour/self-employment) once a year announces funding for development projects at universities and colleges, usually requiring collaboration between at least two institutions. This way collaboration between teachers at different institutions is encouraged. Through its intranet, IDEA also facilitates communication between entrepreneurship teachers, particularly those involved in common projects, and provides teachers with new e-learning tools such as an venture evaluation tool and the development of dynamic digital entrepreneurship cases.

Factors of success and good practice criteria

13. Factors of success and risks/obstacles/weaknesses

The overall success criteria at the national level is significant improvement of well-educated young people in terms of their ability to create new firms, particularly innovative ones, and their ability to contribute to innovation processes in existing firms and organisations. When leaving higher educational institutions all students should have been introduced to the entrepreneurship field and the self-employment perspective, and a growing share should have acquired theoretical knowledge and trained practical skills. In other words, they should be prepared for a future in which creative, innovative and entrepreneurial skills make a difference for themselves and for society. Naturally this is particularly relevant for those educations which predominantly target the private sector, such as business economics and engineering, but it is increasingly also relevant in humanities, architecture and design.



At the university/college level, the number of entrepreneurship courses is naturally important, but insufficient as the quality of the courses, and the learning outcome, is essential. An important success factor is therefore the extent to which traditional lecturing in the field has been substituted by a more balanced pedagogy with a substantial element of active self-learning. Another success factor is the extent to which entrepreneurship courses has disseminated into technical/natural science departments and humanities departments. The ultimate success factor is the creation of the entrepreneurial university/college, characterised by an entrepreneurial management and culture. Universities and colleges are clearly drifting in that direction these years, but still far from this end goal. Barriers are many: a bureaucratic culture, powerful gate-keepers, organisational inertia, and conflicting perceptions of what quality is in teaching and research, just to mention a few. However, the wind is also blowing in the direction of change: pressures from politicians and business people who increasingly embrace the networking and entrepreneurial university; media attention to the entrepreneurship field; significant growth in research interest; and growing interest on part of students demanding more entrepreneurship courses and activities. Hence, pressures are developing from outside, from below (students), from within (teachers and researchers), and increasingly also from the top. IDEAs role is to facilitate this process at all levels in Denmark, drawing on experience from other countries.

14. Criteria for good practice in entrepreneurship teaching

Criteria at university/college level:

- Volume of entrepreneurship teaching relative to total volume,
- The extent to which action oriented pedagogy is applied relative to traditional lecturing,
- The extent to which enterprises (as well as voluntary and public organisations) has two-way collaborative activities with the university/college.

Criteria for teachers:

- The extent to which teachers have acquired specific knowledge and training in the entrepreneurship field,
- The extent to which teachers have a double competence: knowledge in the entrepreneurship field as well as personal entrepreneurship experience.

Criteria for students:

- The extent to which students have acquired reflective, imaginative and action oriented competences in the field, with ability to combine theoretical knowledge with practical skills.

Criteria for decision makers at universities:

- The extent to which improved entrepreneurship teaching and training is seen as a strategic goal,



- Understanding the need for cultural change, from a bureaucratic culture to an entrepreneurial culture,
- Developing a multi-target action program with a pamphlet of activities inside ordinary teaching as well as providing students with start-up facilities, network arrangement and outreach activities.

Criteria for entrepreneurs and managers:

- The extent to which they are involved in entrepreneurship activities at universities and colleges, contributing knowledge, experience and financial resources while also benefiting from contacts with students, teachers and researchers.
-