



European Commission



Enterprise Directorate-General

FINAL REPORT OF THE EXPERT GROUP

“BEST PROCEDURE” PROJECT ON

EDUCATION AND TRAINING FOR ENTREPRENEURSHIP

November 2002

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Further information:

European Commission

Enterprise Directorate General

Unit B.1 Improving Business Support Measures

B-1049 Brussels, Belgium

Fax: +32-2-29.66 27 8

E-mail: Entr-Business-Support@cec.eu.int

http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/index.htm

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MEMBERS OF THE EXPERT GROUP

Country	Name	Organisation	E-mail
Austria	Dr. Hermann Frank	Wirtschaftsuniversität Wien Institut für Betriebswirtschaftslehre der Klein - und Mittelbetriebe	hermann.frank@wu-wien.ac.at
Belgium	Mr. Charles Hittelet	Institut de Formation Permanente pour les Classes moyennes et les PME (IFPME)	charles.hittelet@ifpme.be
Denmark	Mr. Jan Hein Nielsen	Uphill (<i>Process Consultant</i>)	jan@uphill.dk
Finland	Mr. Jussi Pihkala	Ministry of Education	jussi.pihkala@minedu.fi
France	Dr. Alain Fayolle	INPG-ESISAR	Alain.Fayolle@esisar.inpg.fr
Germany	Ms. Marion Huchtermann	Institut der deutschen Wirtschaft Köln	huechtermann@iwkoeln.de
Greece	Dr. Joseph Hassid	University of Piraeus	jhassid@unipi.gr
Ireland	Ms Anna Gethings	AG Services	agethings@agservicegroup.com
Italy	Dr. Franco Sensi	Ministero per le Attività Economiche e Produttive (<i>Consultant</i>).	fsens@tin.it
Luxembourg	Mr. Gilbert Engel	Ministère de l'Education Nationale, de la Formation Professionnelle et du Sport	engel@men.lu
Netherlands	Mr. Robin van IJperen Mr. Edwin Bakker	Ministry of Economic Affairs	E.Bakker@minez.nl
Norway	Dr. Lars Kolvereid Ms. Elin M. Oftedal	Høgskolen i Bodø	lars.kolvereid@hibo.no elin.m.oftedal@hibo.no
Portugal	Dr. Jaime Prudente	IAPME-Direcção de Políticas para a Inovação Empresarial	jaime.prudente@iapmei.pt

Spain	Dr. Ignacio Fernandez Toca	Subdireccion General de Formacion Profesional Ministerio de Educacion, Cultura y Deporte	ignacio.fernandez@educ.mec.es
Sweden	Mr. John Wallon	NUTEK, the Swedish Business Development Agency (<i>Expert</i>)	john.wallon@nutek.se
United Kingdom	Mr. Alastair Mathews	Department of Trade and Industry - DTI (<i>Consultant</i>)	Alastair.Mathews@dti.gsi.gov.uk
European Commission	Mr. Simone Baldassarri	Enterprise Directorate-General	simone.baldassarri@cec.eu.int

The group met five times under the chairmanship of the Commission. The report is based on the contributions of the experts and has been compiled by the Commission.

EXECUTIVE SUMMARY

Encouraging the **enterprise spirit** is a key to creating jobs and improving competitiveness and economic growth throughout Europe. Although entrepreneurship (actual or potential) may be influenced by a number of different factors, there is certainly a cultural aspect that needs to be taken into account. In this respect, education may offer an important contribution. The development of entrepreneurial attitudes and skills can be encouraged in young people, starting from school.

The importance of **entrepreneurship** is widely recognised today as a basic skill to be provided through life-long learning, and interesting experiences exist already in all countries. This project sought to identify initiatives from across Europe that aim to promote the teaching of entrepreneurship in the education systems at all levels, from primary school to university. The overall goal was to reach a better understanding of the nature and scope of existing measures and programmes.

There was a clear need to have a **“qualitative” approach** to this matter rather than relying on quantitative data, because of the nature of the topic itself and because in most countries no precise figures on education for entrepreneurship are available (for instance, number of institutions offering programmes of this type and number of students involved). In the absence of official data, the comparative analysis (synoptical tables) has mostly relied upon **estimates** made by the experts of the situation in their country, on the basis of information available at national level. Therefore, the results of this exercise do not intend to provide any statistical evidence but rather a global picture of the current situation in Europe that is as close as possible to reality, allowing the reader to get an overview of major gaps in entrepreneurship education, and also of some differences between countries.

This project has made use of **existing information**, meaning that no new survey has been launched. For this purpose, a **group of experts** was established in June 2001 with members appointed by the national governments and with the Commission taking a coordinating role. In the process of information-gathering, the experts have drawn from their personal knowledge and expertise, and from sources made available by the national administrations.

The following **Key Aspects** have been addressed:

- Entrepreneurship in Primary and Secondary school;
- Training of the teachers on the subject of entrepreneurship;
- Cooperation between schools/universities and businesses aimed at the promotion of entrepreneurship;
- Entrepreneurship chairs and activities at University level.

One task of the expert group has been to agree on a common **definition of “entrepreneurship teaching”**. There was a general recognition of the importance of including within this definition two different elements:

- a broader concept of **education for entrepreneurial attitudes and skills**, which involves developing certain personal qualities and is not directly focused at the creation of new businesses; and,

- a more specific concept of **training on how to create a business**.

The **objectives** of this type of teaching – to be adapted to the different levels of education – therefore include raising students’ awareness of self-employment as a career option (the message being that you can become not only an employee, but also an entrepreneur); promoting the development of personal qualities that are relevant to entrepreneurship, such as creativity, risk-taking and responsibility; and providing the technical and business skills that are needed in order to start a new venture.

As a part of this project, a number of **examples** have been selected by the national experts as “best practice” cases for their respective countries, on the basis of previously-established general criteria. They are presented in this Report as possible **models**, and are grouped into six broad thematic categories.

In mapping ongoing activities and measures taken at national level by the Member States and Norway, **the experts found the following to be most significant**.

Although numerous activities are currently being developed at all levels of education, many of them are neither integrated into the curriculum nor part of a coherent framework. Initiatives are often isolated, taken by individual institutions, by partnerships or by local authorities. Frequently, they are driven by external actors and not by the education system itself. Entrepreneurship is more likely to be taught as a separate subject or seen as an extra-curricular activity.

As a result of this situation, **most students do not have yet the possibility of taking part in entrepreneurship courses and programmes**.

It remains an open question whether it is preferable to have entrepreneurship included in the national curriculum, or to have this type of teaching as a supplementary and extra-curricular activity. However, unless they are integrated into a global strategy, not even the most interesting and innovative schemes will be the perfect solution. The education system needs to be prepared for this challenge from the inside. This means creating a solid framework for entrepreneurship teaching and giving it a long-term perspective, having more teachers trained on this topic, and finally ensuring that these programmes are generally available for the students.

In conclusion, there has certainly been a **significant shift in culture**, as entrepreneurship is now widely recognised as an important issue to be taught. However, and although examples of good practice can be found in all countries, there is a strong need for further improvement and consolidation. What seems still to be lacking in most cases is a **coherent structure**, so that existing activities can have a place in the education system.

In addition to that, some main **conclusions** of this work have been the following:

- There is today in almost all countries – although in varying degrees – a **policy commitment** at governmental/ministerial level to promote the teaching of entrepreneurship in the education system.
- The development of **indicators** and the collection of **quantitative data** in this field are still very limited.
- The **evaluation of measures** undertaken is mostly done on a limited basis or occasionally.

- Initiatives aiming at promoting the development of an entrepreneurial spirit in pupils are still rare at the level of **primary school**, although a number of examples of good practice can be found in this area.
- This type of teaching is more frequent in **secondary schools**, very often depending on initiatives taken individually by the educational institutions.
- **Initial vocational training** systems of secondary level in most countries are not sufficiently orientated towards self-employment and entrepreneurship.
- Entrepreneurship training at **university level** is currently mostly directed at students following economics and business courses.
- Schemes based on "**learning by doing**" – whereby students create and run mini-enterprises – are a widely used practice in many countries for the development of entrepreneurial skills, especially at secondary level.
- The current provision of specific **training for teachers** on entrepreneurship is insufficient. This is a major obstacle to introducing the concept of entrepreneurship into the classes.
- **Links between schools and the world of business** aimed at the promotion of entrepreneurship are widely developed in most countries, in many cases as a result of initiatives taken at a local level and independently by individual organisations or educational institutions.
- However, there is a **lack of private funding** for entrepreneurship programmes in Europe.

The Expert Group therefore proposed a number of **recommendations** for future action in this area, including (among others):

- The organisation of a "**European Day of Entrepreneurship Education**".
- The creation of **permanent networks** between experts in this area.
- Improving the efforts for the collection of quantitative data, including establishing **Action Plans** at national level.
- Increasing the provision of specific **training for teachers**.
- Further promoting existing international programmes based on **learning by doing**.
- Creating a **framework** (at national or regional level) for entrepreneurship education.
- Translating **policy commitment** into concrete action (i.e. changing the national curriculum where the system is centralised, and/or providing assistance and incentives where schools are free to establish their own programmes).

A **follow-up** to this project (also including a number of Candidate Countries) was begun immediately after the publication of this Report, aiming to identify a **methodology for achieving and for assessing progress** in this area.

1. Introduction and background

Encouraging the **enterprise spirit** is a key to creating jobs and improving competitiveness and economic growth throughout Europe.

Although variables like the number of new start-ups (rate of entrepreneurship) or the psychological attitudes of people towards self-employment (latent, or potential entrepreneurship) may be influenced by a number of different factors, there is certainly a cultural aspect that needs to be taken into account. The image of entrepreneurs as positive role models has never been as strong in Europe as in the US. Becoming an entrepreneur has long been seen as an unsafe and risky option, not particularly appealing and less socially rewarding than other, more traditional professions. The educational systems have not in the past been geared towards the development of entrepreneurship and self-employment, the final goal of the educational path being rather to produce employees working in a big company or in a public administration.

However things have been changing fast in recent years, and there is a growing awareness in Europe that initiatives should be developed in order to promote an enterprise culture, and to encourage risk-taking, creativity and innovation. Entrepreneurship is finally seen as a basis for growth.

As a result, the importance of **entrepreneurship** as one of the basic skills to be provided through life-long learning is today widely recognised. The Lisbon European Council and the European Charter for Small Businesses¹ have stressed this point.

In particular, the **European Charter for Small Enterprises** commits the EU to teach business and entrepreneurship at all school levels, and to develop training schemes for managers.

Also, in February 2001 the Education Council adopted a **Report on the Future Objectives of the Education Systems**. Key areas identified include strengthening the links between educational institutions and businesses, and developing the spirit of enterprise throughout the education and training systems.

Although a few exceptional individuals are born entrepreneurs, the development of an entrepreneurial attitude can be encouraged in young people, starting in school. Also, the relevant technical and business skills need to be provided to those who choose to be self-employed and/or to start their own venture — or might do so in the near future.

However, entrepreneurship should not be considered just as a means for creating new businesses, but as a general attitude that can be usefully applied by everyone in everyday life and in all working activities.

In most EU countries, initiatives exist already addressing this issue. A certain amount of qualitative information on existing good practice in Europe in the field of education and training for entrepreneurship has been collected by means of previous activities carried out or coordinated by the European Commission.

¹ Adopted by the General Affairs Council and welcomed by the Feira European Council in June 2000.

Under the methodology of concerted actions developed by the Commission, the Forums organised in 1998 in **Stockholm** (“Training for start-ups”) and **Baden** (Workshop 1: “Training for entrepreneurs”) have favoured the exchange of good practice between the Member States and have stimulated awareness at European level of objectives that need to be attained.

More recently (October 2000), the **Forum on “Training for Entrepreneurship”** in Nice/Sophia Antipolis – co-organised by the Commission and by the French authorities – tackled the subject of entrepreneurship from three different perspectives:

- in the **educational system** (from primary to tertiary level)
- in the **vocational training** system
- in the companies themselves (*intrapreneurship*)

More information on the Forum on “Training for Entrepreneurship”, including the proceedings, can be found on the Internet at the address:

http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/training_education/index.htm

Following these initiatives – and given the high level of priority that this topic has gained at European level – the need was recognised to take stock of existing measures in Europe, and try to assess their scope and impact.

Subsequently – on the basis of the conclusions of the above-mentioned Forum and within the framework of the Multiannual Programme for Enterprise and Entrepreneurship (2001-2005) – this “**Best Procedure**” project on **education and training for entrepreneurship** was adopted.

The **Best Procedure** has been created (following a mandate from the Lisbon Council) in order to promote the exchange of best practice and also to provide synergies between existing processes that go in that direction. The common feature of projects under the Best Procedure is the analysis of issues of interest for the Commission and national administrations, with a view to gaining a better understanding of the nature of such issues, of the efforts being deployed and the identification of best practice.

In the end, the whole process aims at encouraging policy change in the Member States, one of the essential features of this methodology being that projects are carried out jointly by the Commission and by the national administrations concerned.

2. Objectives and methodology

- Objectives of this work

This project seeks to identify initiatives from across Europe that aim to promote the teaching of entrepreneurship at any level of the education system from primary school to university. The overall goal is to reach a better understanding of the nature and scope of existing measures and programmes.

It is not possible – nor is it the ambition of this work – to produce a comprehensive list of all that exists, as a great number of specific initiatives are being developed at a local level and independently by individual schools and universities. Educational institutions are in most cases free to establish their own courses and to carry out some activity on business education and entrepreneurship, within or outside the national curriculum. In all countries, partnerships exist between schools and local businesses or business associations in order to develop joint projects.

Rather, this work aims to present a picture of the current situation in Europe, and to be a possible reference for future action in this area, by:

- Preparing the ground for a possible common approach at European level on a number of key elements (such as an agreed definition of entrepreneurship teaching, relevant indicators in this area, criteria for identifying best practice, etc.);
- Providing an overview of entrepreneurship teaching in the context of the different national education systems;
- Gathering and disseminating information on the strengths and weaknesses of entrepreneurship education in Europe;
- Providing a comparative analysis of the situation in each country, based on qualitative information, available quantitative data and estimates;
- Identifying and presenting a number of examples to be proposed as possible models in Europe;
- Presenting relevant policy conclusions, and recommendations for future action in this area.

The present work has the ambition to create a framework for further developments and research in this area that can be used by the European institutions and by national administrations for their future activities.

In the end, the final goal of this project – as mentioned in the previous Chapter – is to provide a contribution to steering policy action in Europe in the field of education for entrepreneurship.

- Methodology used

In order to carry out this project, a **Working Group** was set up, composed of **national experts** in this field. The experts were officially designated by the governments of **all EU Member States** and **Norway**. The aims of this group were to bring together the necessary expertise; to provide for information and data on entrepreneurship measures and programmes; and finally, to ensure cooperation and an

active involvement in the project of the national administrations of the participating countries.

Although all experts were appointed by the governments, they do not necessarily belong to the national administrations. In fact, only four of the 16 experts come from the Ministries (Education or Economy). The others work in universities, development agencies, training institutions, or private organisations. In some cases, they are independent consultants. This has proved a valuable asset, as it has meant taking advantage of a **broad range of expertise** – and also of different points of view – during implementation of the whole project. Of course, all the experts have received the necessary support from the national administrations that appointed them (*the complete list of experts is shown at page 4*).

Education and training for entrepreneurship is a broad subject, which may include very different areas of activity. During the first meeting of the group of national experts, it was proposed by the Commission that this project should focus on the **education systems**, from primary level to university. That means that in this project the vocational training aspect was taken into account only with regard to initial vocational training taking place at secondary school level and being part of the formal education system. Further vocational training (except for teacher training), training schemes for the unemployed or for disadvantaged groups, in-company training, training for managers, etc. are not within the scope of this work.

The decision to avoid addressing too many different issues responded to a need to focus the effort, and to ensure coherence and visibility for the results of this work.

Therefore, it was necessary to identify a limited number of **key aspects** of education for entrepreneurship, to be used as focal points for the forthcoming activity. They are the following:

- 1) Entrepreneurship in Primary and Secondary school;
- 2) Training of the teachers on the subject of entrepreneurship;
- 3) Cooperation between schools/universities and businesses aimed at the promotion of entrepreneurship;
- 4) Entrepreneurship chairs and activities at University level.

The need to have a **qualitative approach** to this topic, rather than relying on quantitative data, has been stressed by the experts since the beginning of this work. A qualitative analysis is considered to be a more effective and realistic tool in the area of education for entrepreneurship, and also there is a perceived difficulty in obtaining satisfactory data of a quantitative nature at national level.

In fact, the main problems identified by the experts have concerned:

- the absence of a generally agreed definition of “entrepreneurship teaching” and its objectives (different definitions or concepts may be used in each country, or indeed no agreed definition may exist at national level);
- the fact that many initiatives are taken at a local level, or autonomously by single institutions, and thus that in many cases no complete picture of all that is happening is available at a central level;

- the difficulty in obtaining comprehensive quantitative data at national level (such as number of institutions and teachers involved in this type of activity, number of students participating, etc.), due to the lack of such information in most countries.

The working group has developed a number of **indicators** that can be helpful if we want to assess (and compare) the “**effort**” produced by the whole system (public administrations, educational institutions, business associations, etc.) to promote entrepreneurship attitudes and skills in formal education.

More difficult would be to compile indicators of “**impact**”, measuring the final results of existing initiatives, for instance in terms of new ventures created, or of a more positive attitude towards entrepreneurship in young people. In fact such developments may take place many years after the students’ participation in specific activities or programmes, and a number of different factors may also exert an influence.

For this reason, indicators developed within this project are mainly indicators of effort (“**input**”), rather than indicators of impact (“**output**”).

With a view to assembling and disseminating information on some **qualitative aspects** of this issue, it was agreed that a **synoptical table** should be developed with indicators providing some basic information on the state of play of entrepreneurship teaching in each country. This table is shown in Chapter 4.

As mentioned above, in most countries precise quantitative data on education for entrepreneurship are not available. However, it was agreed that a **synoptical table** with **indicators of a quantitative nature** should be produced as this is an essential instrument if we want to evaluate, compare, and identify major gaps.

Therefore, as concerns this second table the experts of the working group have proposed that numbers and percentages are replaced by a **ranking system** based on available data and on estimates. This table is also shown in Chapter 4.

The result of this exercise is not claimed to provide statistical evidence, but rather a global picture of the current situation in each participating country that is as close as possible to reality, allowing the reader to get an overview of major gaps in entrepreneurship education, and also of current differences at European level.

It is clear that the statistical aspect needs to be developed in the future, both at national and at European level. One main objective of this work is precisely to promote the development of indicators and the collection of data at national level, and to provide a possible European framework for that (*see Chapter 7, Policy conclusions and recommendations*).

- Information on the collection of data

- ➊ First, a Questionnaire was drafted by the Commission – in agreement with the working group – and distributed to the national experts, with specific questions addressing education for entrepreneurship that were related to key aspects identified for this project.
- ➋ Next, two tables with qualitative and quantitative indicators – as previously agreed by the group – were prepared by the Commission and completed by each national

expert. Data included in this tables, and their overall consistency, have been cross-checked by the experts themselves and by the Commission.

- ➡ Of course, in this process of collecting information, the experts have drawn not only from their personal knowledge and expertise, but also from sources of information made available by the national administrations for this project.
- ➡ After agreeing on a list of general criteria that would define a “best practice”, the experts have proposed a number of cases that are included in this report as possible models.
- ➡ Five meetings in Brussels were devoted to the definition of concrete objectives to be reached, agreement on steps to be taken, exchange of ideas and information, and coordination of the work to be undertaken.

No external contractor has been used for this project. All activities, including gathering information, have been carried out by the experts of the Working Group, by the national administrations concerned and by the services of the Commission.

- Follow-up to this project

A **follow-up** to this project (also including a number of Candidate Countries) was started immediately after the drafting of this Report, aiming to identify a **methodology for achieving and for assessing progress** in this area.

Final results for this second phase are expected by June 2003.

3. Definition of entrepreneurship teaching

- What does “entrepreneurship teaching” mean?

There was in the Working Group a general recognition of the importance of including two different elements or concepts within the definition of entrepreneurship teaching:

- A broader concept of **education for entrepreneurial attitudes and skills**, which involves developing certain personal qualities and is not directly focused on the creation of new businesses; and,
- A more specific concept of **training in how to create a business**.

The Working Group has subsequently agreed on the following definition of **entrepreneurship teaching** and its **objectives** at the different levels of education.

This definition is at the basis of all activities developed in the context of this project, and is proposed as a reference for future analysis in this area.

A proposed definition for “entrepreneurship teaching”:

Teaching and learning about entrepreneurship involve developing knowledge, skills, attitudes and personal qualities appropriate to the age and development of the pupils or students.

- **At the level of primary education**, entrepreneurship teaching will aim to foster in the pupils those **personal qualities** such as creativity, spirit of initiative and independence that contribute to the development of an entrepreneurial attitude, which will prove useful in their life and in every working activity. In this phase, **autonomous** and **active** forms of learning should be developed. Moreover, this teaching will provide **early knowledge** of and **contact** with the world of business, and some understanding of the role of entrepreneurs in the community. **Activities** may include working on projects, learning by playing, presentation of simple case studies and visits to local enterprises.
- **At the level of secondary education**, the development of the personal qualities mentioned above will continue to be relevant. In addition, entrepreneurship teaching will include **raising the awareness** of the students about self-employment as a possible career option (the message being that you can become not only an employee, but also an entrepreneur); **learning by doing** — for instance by running mini-enterprises; **specific training** on how to create a business (especially in vocational or technical schools).
- **At the level of tertiary education**, entrepreneurship teaching will provide the students with specific training on **how to start (and run) a business**, including the capacity to draft a real **business plan** and the skills associated with methods of identifying and assessing business **opportunities**. Also, it will encourage and **support** embryonic **business ideas** (for instance by providing special loans, business facilities, mentorship, etc.) - so that well-researched projects can be put into practice and finally reach the market.

- Background: development of personal qualities

As regards the development of **personal qualities of the individual** that are relevant to **entrepreneurship**, the following objectives for education – in particular at the lower levels (primary and secondary) – were mentioned at the Forum in Nice/Sophia Antipolis on “Training for Entrepreneurship” in October 2000:

- Pupils' and students' ability to **solve problems** should be increasingly encouraged. This implies encouraging ability in the fields of **planning**, **decision-making**, **communication** and the willingness to assume **responsibility**. These are typical aspects of management competence.
- Pupils and students should increasingly gain competence in the fields of the **ability to cooperate**, **networking**, learning to **assume new roles**, etc. These aspects lie especially in the field of social competence.
- In the course of their education, school pupils and students should develop **self-confidence** and the **motivation** to perform, **learn to think critically** and independently, and particularly gain the willingness and ability to **learn autonomously**. These are typically personal fields of competence.
- School pupils and students must learn the will to show personal **initiative**, **proactivity** and **creativity**, as well as being prepared to **confront risks** in conjunction with **implementing ideas**. These are typical entrepreneurial qualities.

4. Analysis of the current situation

- Introduction on the methodology used

Two synoptical Tables are attached at the end of this Chapter (*for more information, see also Chapter 2 on methodology*). These Tables are used as a basis for the analysis that is developed here.

Table 1 shows indicators of a “qualitative” nature, whose aim is to provide information on some key aspects of entrepreneurship teaching in each country. Although these are questions that would typically call for a “Yes” or “No” answer, it was agreed by the working group that “Yes” answers could be given a varying degree of intensity in order to improve the information that is provided by means of this table. For this reason, four simple ranks have been used, going from “*Yes / Full application*” to “*Frequent*”, “*Limited or occasional*” or “*No application*”.

Table 2 presents a set of “quantitative” indicators that try to measure the effort produced by the whole system in the promotion of entrepreneurship teaching. Due to the lack of precise and comprehensive quantitative figures at national level, a ranking system has also been used here (“*General application*”, “*Frequent application*”, etc.). The choice of appropriate ranks has been based on available quantitative data and (in most cases) on estimates.

These two synoptical tables are not claimed to represent statistical evidence, nor do they have the ambition to provide official data for the countries concerned. Their objective is to offer a contribution to a better understanding of the question, and of current developments in Europe, by providing a global overview of the situation and highlighting the strengths and weaknesses of entrepreneurship education in the 16 countries examined.

Besides building on the knowledge and expertise of the designated national experts, the information provided here is the result of specific enquiries carried out at national level by, or with the support of, the public administrations and other institutions or agencies concerned.

More information on the process of information-gathering is given in Chapter 2.

- Main findings

➤ **Policy commitment at national level to promote entrepreneurship in education**

Of course, it is difficult to measure something as intangible as a “commitment”. However, national experts have tried to express the level of policy commitment existing in their respective countries in terms of different degrees of intensity.

As a result, it can be seen that there is in most countries a significant or a high degree of **policy commitment** at governmental/ministerial level to promote the teaching of entrepreneurship in the education systems. In many cases, a strategy has been put into place to foster this type of teaching at different levels of education. Also, there are some examples of setting up structured cooperation between the various Ministries and public agencies involved in this topic (for instance, in France, Finland and Norway).

However, this is a relatively new priority for governments. In some cases the commitment has not been yet translated into concrete measures, or action has been started quite recently (Greece, the Netherlands). Only one country (Portugal) seems to show no explicit policy commitment on education for entrepreneurship, while in four countries (Austria, Germany, Italy and Sweden) commitment appears rather weak.

➤ Development of **indicators** on entrepreneurship in education

The development of indicators on entrepreneurship in education is reported as low in almost all countries. This is of course a major obstacle to assessing progress at national and at European level.

Moreover, where indicators exist they differ from country to country, as no agreed European indicators have been established so far in this area.

➤ Collection of **quantitative data** at national level on entrepreneurship in education

In all but a few countries the collection of quantitative data at national level in this area is reported as non-existent or limited/occasional.

Some specific circumstances make the availability of data particularly problematic. The education systems are often decentralised, and institutions have a high degree of autonomy in establishing their own courses and programmes even within the framework of the national curriculum. A great number of initiatives are taken by different actors, normally by means of partnerships, at a local level and by individual institutions. Given this situation, it is difficult for central administrations to have a complete overview of all that exists. *Ad hoc* research is needed. The importance of collecting data in this area is now widely recognised at national level. Interesting initiatives going in this direction have begun very recently, for instance in the UK and in France.

The relative absence of aggregate data on such key figures as the number of courses and programmes available at all levels, or the number of teachers and students involved in these programmes, makes it very difficult to assess the scope and impact of existing initiatives at national level and even more so at European level. Action needs to be greatly improved in this area, preferably within a European framework (*see Chapter 7, Policy conclusions and recommendations*).

➤ Mechanisms in place to **evaluate** the effectiveness of measures

In most cases, the **evaluation of measures** is undertaken only occasionally or on a limited basis. In addition, there is no widely accepted measure of outcomes (for example, entrepreneurial capability) against which many of these activities can be judged.

There is a recognised need for a regular assessment of the impact of existing programmes (*see Chapter 7, Policy conclusions and recommendations*).

➤ **Private funding for entrepreneurship in education**

Almost all countries report that funding from private sources (enterprises, business associations, etc.) for entrepreneurship courses and programmes at school and university level is low or sporadic.

There seems to be a deficit in private funding for entrepreneurship programmes in Europe. A survey carried out in 2000 of funding of entrepreneurship chairs at tertiary level showed that business schools in the United States receive 20 times more funding from alumni and entrepreneurs than European business schools².

Moreover, the private sector tends to invest mostly at university level (and especially in fields related to science and technology), as the return on investment is seen as more certain, rather than at primary and secondary school level. Adequate investments from the business world should be ensured also at the lower levels of education.

➤ **Inclusion of entrepreneurship in the national curriculum**

– **At primary level**

The inclusion of entrepreneurship in the national curriculum at primary level is rare or is done only to a limited extent. The expression “entrepreneurship” normally cannot be found as such (with some exception, for instance Finland). However, in some countries a general framework exists that can be used for this type of teaching. Whether it is actually done depends very much on individual schools and on teachers.

At this level, existing programmes mostly address attitudes, motivation and the use of work methods stressing self-teaching, cooperation and creativity. A more specific focus on entrepreneurship is rare.

– **At general secondary level**

As might be expected, entrepreneurship is more present in the national curriculum at secondary level. However, there is normally no obligation, or just an indirect obligation, to promote entrepreneurship, and actual implementation depends – as for primary schools – on the will of individual institutions and teachers. Schools normally have a high degree of autonomy in carrying out their educational activities. In many cases the national curriculum provides a broad framework that can be used for this purpose (as it is the case, for instance, in Austria and in the UK). However, the teaching of entrepreneurship is most frequently considered as an extra-curricular activity (Denmark, Italy).

– **At initial vocational training of secondary level**

As regards the national curriculum for initial vocational training at secondary school level, mention of entrepreneurship as a possible objective is not infrequent (for instance, in Spain). However, the situation varies widely between countries, and in

² Entrepreneurship Education and its Funding – A comparison between Europe and the United States, by Dr. Bert W.M. Twaalfhoven, June 2000.

practical terms a clear focus on entrepreneurship and self-employment seems to be missing in most cases (*see the following point on initial vocational training*).

➤ *Measures taken at national level in order to promote the teaching of entrepreneurship in universities*

As for tertiary education, initiatives are in most cases taken independently by individual universities, rather than at central level. Central administrations cannot impose in this area, but only support and facilitate.

There are however some good examples of a national strategy for promoting entrepreneurship at university level, often as a result of cooperation between the national administrations and universities. This type of strategy can be found, for instance, in the UK, Finland and France (*see country reports in Chapter 5*) .

➤ *Teachers' training*

The Tables show that in almost all countries training of teachers on the subject of entrepreneurship is rare, or takes place only occasionally or on a limited basis . This is true both if we look at the inclusion of courses in the curriculum of colleges for teachers (initial vocational training), and at the availability of further training on this topic for teachers during their career. There seems to be no exception to this situation, although some interesting practices exist at local level (for instance, in Norway and Finland)

In some instances, specific training is offered to teachers on a voluntary basis. One identified obstacle is a lack of motivation from the teachers – and consequently a low rate of participation in these courses – when the importance of entrepreneurship is not recognised by the national curriculum.

Improving the ability of trainers to understand and to teach entrepreneurship is crucial. In fact, without their enthusiasm and active involvement – and given a situation where the implementation of entrepreneurship activities relies a lot upon their initiative – it is unlikely that much progress would be achieved in this area. A lack of motivated and trained teachers thus creates a barrier to the implementation of entrepreneurship courses and programmes.

One possible alternative to providing adequate teacher training is the use of ‘tutors’ from the business world who bring their expertise into the schools. There are a number of interesting examples of this approach (*see, for example, selected cases from Italy and Luxembourg in Chapter 6*). However, this should be considered as a complementary solution, very helpful within specific circumstances and programmes, but which cannot replace building the relevant abilities within the educational structure.

➤ *Primary schools including an entrepreneurship element in their courses*

In most countries, application of entrepreneurship courses and activities at the level of primary school is defined as “non-existent or rare” (in 9 countries out of 16). In other cases (five) it is judged limited or occasional.

The only striking exception within this otherwise rather even panorama is represented by Luxembourg, which shows a full application. This is due to a unit in the compulsory programme of French in the 6th year of studies, which is based on a strip cartoon called “*Boule et Bill créent une entreprise*” (Boule and Bill create an enterprise) and is entirely dedicated to making the pupils familiar with the enterprise spirit and to explaining to them some basic elements of the functioning of economy (see country report in Chapter 5).

However, a number of interesting experiences exist in different countries. In many cases they are not integrated in the national curriculum and are promoted by actors or organisations from outside the education system, in cooperation with the schools. The most important example of this is probably the “*Junior Achievement*” programme (which has a significant presence, for instance, in Ireland).

➤ Comprehensive schools of **secondary level** offering teaching in entrepreneurship

The situation improves at secondary level, where only five countries report a “rare application” for the teaching of entrepreneurship. While in three more cases there is just a limited or occasional application, in the others the score is at least “significant” or “frequent” with two countries (Ireland and Spain) reporting a general application for programmes of this type.

Numerous initiatives are in place, although very often taken independently by the educational institutions, or by actors external to the education system, and not included in any kind of framework nor part of an overall strategy for the promotion of entrepreneurship. However, various examples of a global approach do exist, at both national and regional level (see, for instance, cases from France, the Netherlands, Sweden and the UK included in Chapter 6).

Reports received show that at the level of secondary education schemes based on **learning by doing** – through students creating and running mini-enterprises – are a widely-used instrument in many countries for the development of enterprise skills in students. The programme of this type which has the most important impact in Europe is probably “Young Enterprise”. Young Enterprise Europe (YEE), is an international organisation with members in 20 countries throughout Europe and the Mediterranean area³. YE programmes currently exist in 12 of the 16 countries participating in this study. These programmes normally address secondary education, but also universities in some cases. Between 1996 and 2001 about 2.35 million young people (in the 20 countries) have participated in programmes offered under the YEE umbrella. About 600,000 students (at all levels) are involved in these programmes each year (for more information see Chapter 6). In a number of countries (for instance, in Belgium and Norway) the contribution offered by these programmes to the promotion of entrepreneurship education is particularly significant.

³ Since September 2002, the international networks “Young Enterprise Europe” and “Junior Achievement” have merged. The new organisation is now called “JA-YE Europe”.

➤ **Initial vocational training with an entrepreneurship element at secondary school level**

At this level of education, 7 out of 16 countries report a limited or occasional application of entrepreneurship teaching.

Moreover, if we compare these data with what has been previously shown for secondary level comprehensive schools, in some cases entrepreneurship schemes do not appear to be more frequently applied in vocational/technical institutions than in the other schools of secondary level.

One could expect that initial vocational training is where the most important initiatives are taken in order to promote entrepreneurship. However, in most cases in this type of education there is not a real focus on self-employment or on setting up a business (this situation is reported, for instance, in Austria, the Netherlands and the UK). This means that very frequently in these schools only the technical aspect is taken into account (for example, the students are taught how to be a hairdresser but not how to start up a hairdressing business). The curriculum requires students and apprentices to become employees, since the main task is seen as being to train skilled workers. It should also be considered that Young Enterprise programmes – which are widespread at secondary level and have a significant presence in some countries – do not normally operate in vocational schools.

Spain is the only country to report general application of entrepreneurship programmes within the initial vocational training system at secondary level. The Spanish system is a very interesting example in this respect, as this type of education has self-employment as an explicit objective (*see country report in Chapter 5, and also selected case for Spain in Chapter 6*).

➤ **Links and cooperation between educational institutions and businesses aimed at the promotion of entrepreneurship**

It seems from the information available that links between schools and the world of business aimed at the promotion of entrepreneurship are well developed in most countries. Initiatives are normally taken at a local level by enterprises or business associations and independently by individual educational institutions. However, some examples of a global strategy of cooperation also exist at a national level, for instance in the UK, where there is a national mechanism (in England) to promote education-business links (*see country report in Chapter 5*).

Private-public partnerships are very important in this area, and good models of this can be found in a number of countries.

➤ **Entrepreneurship Chairs and activities at the level of Tertiary Education**

Table 2 shows that few universities have a Chair in Entrepreneurship. The situation improves if we look at entrepreneurship activities in general, that is at the presence of entrepreneurship within different teaching subjects (at both undergraduate and postgraduate level).

However, although many activities are reported to take place in universities it is difficult to get precise figures. Universities are autonomous institutions, and many of

them offer modules and courses in entrepreneurship on their own initiative. In most cases no data are available at national level, and it is difficult to quantify the extent of this independent provision.

National reports agree in stressing that entrepreneurship teaching at tertiary level currently concentrates mostly on students following economics and business courses, while the offer is still very limited for those studying different subjects such as sciences, engineering, arts, etc. The provision of this type of training should not be restricted to certain courses or faculties, as entrepreneurial qualities and skills may be needed in every sector of human activity (*as an example of good practice, see selected case from Ireland in Chapter 6*).

Concluding remarks

Although numerous activities are currently being developed at all levels of education, many of them are neither integrated into the curriculum nor part of a coherent framework. Initiatives are often isolated, taken by individual institutions, by partnerships or by local authorities. Frequently, they are driven by external actors and not by the education system itself. Entrepreneurship is more likely to be taught as a separate subject or seen as an extra-curricular activity.

As a result of this, **most students do not have yet the possibility of taking part in entrepreneurship courses and programmes.**

It remains an open question whether it is preferable to have entrepreneurship included in the national curriculum, or to have this type of teaching as a supplementary and extra-curricular activity. There can be certain advantages in both approaches, and different solutions could be combined and adapted to specific needs. For instance, some members of the working group felt that a programme taking place on a voluntary basis and out of the normal school hours calls for a greater sense of responsibility and more motivation from the students who choose to participate. Others suggest that it is important not to present entrepreneurship to schools as yet another teaching subject but as a horizontal, complementary issue to already existing programmes.

However, unless they are integrated into a global strategy, not even the most interesting and innovative schemes will be the perfect solution. The education system needs to be prepared for this challenge from the inside. This means creating a solid framework for entrepreneurship teaching and giving it a long-term perspective, having more teachers trained in the subject, and finally ensuring that these programmes are **generally available** to students.

In conclusion, there has been certainly a significant **shift in culture**, as entrepreneurship is now widely recognised as an important issue to be taught. What seems to be still lacking is a **coherent structure**, so that existing activities and examples of good practice can have a place in the education system (*see also Chapter 7, Policy conclusions and recommendations*).

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	N
9. Inclusion of entrepreneurship in the curriculum of teachers' colleges (initial training)																
10. Further vocational training on entrepreneurship generally available for teachers during their career																
11. Measures taken at national (or regional) level to promote the teaching of entrepreneurship in universities																

Ranks:

(1) <i>YES / Full application</i>			(3) <i>Limited or occasional application</i>	
(2) <i>Frequent application</i>			(4) <i>NO / No application</i>	

N.A = Information not available

TABLE 2: QUANTITATIVE INDICATORS ON ENTREPRENEURSHIP TEACHING

	B ³	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK ⁴	N
• Primary School																
1. Primary schools including an entrepreneurship element in their courses	D	D	E	E	E	E	E	E	A	E	E	E	D	D	C/D	D
• Secondary School																
2. Comprehensive schools of secondary level offering teaching in entrepreneurship	B	D	E	E	A	E	A	B	C	E	E	D	D	C	B-D	C
3. Initial vocational training at the level of secondary school with an entrepreneurship element	D	B	D	C	A	D	N/A	B	C	D	D	C	B	C	D	D
• Training of Teachers																
4. Teachers receiving entrepreneurship training in colleges as part of the curriculum.	E	D	E	E	D	E	E	E	E	E	E	E	D	D	D	E
5. Teachers receiving further vocational training in entrepreneurship	C	B, C, D, E ⁵	D	E	E	E	E	D	E	E	E	D	D	E	C/D	D
• Cooperation between educational institutions and businesses																
6. Schools having links with businesses or business associations aiming at promoting entrepreneurship	B	D	D	D	C	C	B	B	D	D	E	B	B	B	B-C	C
7. Universities having links with businesses or business associations aiming at promoting entrepreneurship	D	D	D	D	N/A	D	B	B	C	D	D	B	B	B	B-C	D

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	N
• Entrepreneurship in Tertiary Education																
8. Higher education institutions with a Chair in entrepreneurship	B	E	D	D	C	E	E	E	E	C	D/E	D	B	D	A-C	D
9. Higher education institutions teaching entrepreneurship within under-graduate courses on other subjects	C	D	D	D	C	B	D	D	C	C	E	C	B	D	B/C	D
10. Higher education institutions offering post-graduate courses in entrepreneurship	C	E	D	D	C	B	E	D	E	C	E	C	B	B	A-B	D

Ranks:

(A) General application (i.e. from 90 to 100 % of cases)

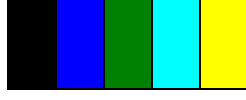
(B) Frequent application (i.e. from 60 to 90 % of cases)

(C) Significant level of application (i.e. from 30 to 60 % of cases)

(D) Limited or occasional application (i.e. from 10 to 30 % of cases)

(E) Rare or no application (i.e. from 0 to 10 % of cases)

N.A = Information not available



¹ Information is available only for the French Community and for the German Community

² Different ranks are shown as education policy in the UK is developed autonomously at regional level (data for England, Wales, Scotland and Northern Ireland)

³ Information available only for the French Community and for the German Community.

⁴ Different ranks are shown as education policy in the UK is developed autonomously at regional level (data for England, Wales, Scotland and Northern Ireland). Where there are more than two different scores, this is shown as a range (e.g. A-D); where we have only two different scores across the four countries they are shown as : A/B, etc.

⁵ Depending on the level of education.

5. A general overview of entrepreneurship teaching in the context of national education systems

Austria

Austria's education system has a range of activities intended to promote or stimulate entrepreneurship, but there is no systematic strategy covering all components and stages of that system. It would be more accurate to say that information campaigns and cooperation possibilities are developed centrally with businesses and/or interest groups, and then requested by schools according to their interests and needs.

The speed with which such projects can be developed and cooperation progresses is extremely impressive. The “*Unternehmen-Bildung*” project (www.unternehmen-bildung.at) would be one successful example of this method.

In **primary** and **lower secondary** schools, there is a good deal of leeway in both subject-matter and teaching methods which can be used to promote self-reliance and the “entrepreneurial spirit”, but no systematic or more comprehensive strategies can be discerned at these levels in the education system. One-off, *ad hoc* initiatives are not enough to promote the independence which goes with an “entrepreneurial spirit”.

In **secondary academic schools** and **vocational colleges**, conventional teaching methods predominate, and these encourage independence only to a limited extent. During the past two academic years, it has been possible to specialise in business start-ups/entrepreneurship at business colleges, and there are also numerous “practice firms”, which may be looked on as a practical way of gaining access to the business world. The “*Junior-Projekt*” (pupils start a business for the duration of a school year), which is open to all upper secondary schools and colleges, has been outstandingly successful in focusing on entrepreneurship, but considering how many schools there are, it has made little impact.

At technical and other **universities**, there are currently five chairs – Klagenfurt, Linz, Salzburg (Technical University) and two in Vienna – for the study of the various topics connected with entrepreneurship and small business management, but the courses on offer have not had any very widespread impact either, considering the 180 000 or so students at universities. In addition, there is still a post-graduate course available at the *Donauuniversität Krems*, which concentrates on entrepreneurship and has around 15 to 20 students a year.

There are numerous examples of cooperation between schools and universities (technical or otherwise) on the one hand and businesses on the other, but most of these depend on individual initiatives by schools themselves or their teaching staff. The activities in question are still rather input-oriented, with very little cooperation geared specifically to possible results. Any line of action governed primarily by this aspect tends to make the students see themselves as administrators or managers, and it is not then easy to foster entrepreneurial attitudes at a later stage.

Belgium

Belgium's education system is the responsibility of the three language Communities (French, Flemish and German-speaking), and is therefore highly **decentralised**. Within each Community, education is provided both by the private and the public

sectors. The latter comprises the communes, provinces and the Communities themselves. There are three major education categories: Community education, subsidised free education, which is predominantly Catholic, and subsidised official education, which is organised by the towns and communes.

Schools were given greater autonomy on 1 January 1989, when responsibility for education was transferred to the Communities. There is therefore no single, monolithic structure for training for entrepreneurship, but rather, a large number of initiatives which are often organised on an occasional basis by schools or groups of schools, Chambers of Commerce or groups of companies.

In Belgium, the federal government has no control over the organisation of education, and the Communities organise primary, secondary and tertiary education in their respective territories.

Some initiatives are taken for **primary school** pupils by professional or inter-professional associations or skill centres. They are aimed at arousing young peoples' interest in certain trades.

More events are organised for **secondary school** pupils (especially those in their final years at school). A common feature in all three Communities is the “mini-enterprise”, which gives young people the chance to set up a company for the duration of each school year.

At **tertiary level**, training for entrepreneurship is available in several universities for students following under-graduate courses. For example:

- the “Belgian Euro Business Challenge” organised by “Jeunes Entreprises asbl”: the Challenge provides a simulated market situation in which a team of managers have the job of making their company grow.
- The Business Plan Competition “1,2,3, Go”, which is also accessible to students and aimed at fostering the entrepreneurial spirit throughout the Transfrontier Region of Lorraine, the Grand Duchy of Luxembourg, Trier, Saarland and Wallonia.
- the interdisciplinary course in “Business Creation” at the Catholic University of Louvain is aimed at students of law, civil engineering and management.
- specialised studies in entrepreneurship (“DES en entrepreneuriat”) are offered by Liège University and targeted at the university's graduates and teaching staff in all departments.

Denmark

In 1996 The Danish Ministry of Education decided on a **two year action programme** targeting all youth education programmes. The aims were to enhance motivation among young people as to setting up their own business and promotion of entrepreneurial attitudes among all young people whether employed or self-employed. In focus were all levels of the education system commencing in the Folkeskole (**primary and lower secondary school**). DKK 21 million was earmarked in the budget in 1996-1997 for this action programme, and around 200 target-oriented initiatives within the thematic areas were set up, many of which focused on teachers and teaching. The results of the initiatives have been disseminated widely to schools and other stakeholders for discussion and further development. Though The Ministry of Education no longer earmarks special funds for large-scale development work in

this area, many schools continue to focus on the theme as part of general development efforts in teaching.

As a follow-up to that general campaign it has been ensured that entrepreneurial themes and civic independence and innovation culture are visible in all relevant educational contexts. In some programmes, notably vocational education and training and some short-cycle higher education programmes, new curricula have been developed with specific focus on entrepreneurship. In primary and secondary schools, a large number of different measures have been carried through, most of which focus on attitudes, motivation and the use of work methods stressing self-learning, project management and creativity. Actors are typically local schools and teachers. Means and resources are normally generated through pooling schools' and the ministry's resources.

In many programmes at **tertiary level** entrepreneurial themes have been integrated into the curricula, and much work has been put into developing stronger links between higher educational institutions, students and enterprises. During the 1990s nine projects on entrepreneurship at tertiary level have received financial support, including implementation of new programmes. Following completion, a network of universities and other tertiary educational institutions interested in the development in this area have been set up and supported financially by the ministry.

New initiatives as to promotion of entrepreneurial skills and attitudes in education are envisaged for the near future. The Danish government has appointed a special committee involving those government agencies responsible for different sectors of the economy and society. The aim is to set up a new national policy for enhancing entrepreneurship across different sectors, including education at all levels.

Finland

In Finland the curriculum design process is twofold: the National Board of Education, which is subordinate to the Ministry of Education, issues core curricula for the comprehensive school (7- to 16-year-olds), the upper secondary school and vocational schools (upper secondary).

Core curricula for basic and upper secondary education are being now revised. Entrepreneurship education is given more emphasis, and is treated not as a subject but an integrated theme. It means that entrepreneurship education will be implemented in different subjects as best suits them. Schools themselves will determine in their own curricula how this is done. The core curriculum for the whole comprehensive school (years 1-9) will be issued in 2003 and adopted gradually over the period 2004-2006. The timetable for upper secondary core curriculum will be the same.

However, the national core curriculum for **comprehensive and upper secondary schools** already contains entrepreneurship modules, which schools can apply to their own curricula. In addition, teaching methods are stressed that promote entrepreneurial behaviour.

All **vocational qualifications** were recently overhauled and include entrepreneurship knowledge and skills as from 2001.

In the case of **universities** and **polytechnics**, the Ministry of Education approves the titles and the extent of degree programmes. The contents are determined by the

education units concerned. To which extent entrepreneurship is included varies between degree programmes. Heavy emphasis is placed on interaction between education and industry, expert exchanges and the transfer of knowledge from educational establishments to business.

There is a national Business Skills Programme for promoting entrepreneurship and business activities in **universities** from 2001 to 2003. In the programme, which is carried out jointly by the Ministry of Education and universities, business education will be increased by a total of 200 new student places. Entrepreneurship training is developed not only as part of undergraduate education, but also in open university provision, which is intended for all population groups. Measures are being taken to commercialise research findings, to step up the creation of new business and to promote combined technological-business education.

In autumn 2002 the Ministry of Education set up a large steering group for entrepreneurship for a three-year term ending in 2005. Its mandate is to develop and coordinate entrepreneurship education, to strengthen regional networks and cooperation, to produce material, to influence teachers' initial and continuing education, and to promote secondment of teachers to business and industry.

France

The new French government has very recently taken some decisions aimed at fostering the entrepreneurial spirit. A national policy for raising awareness will be set up in order to promote entrepreneurship within the educational system, and also to change attitudes and mentalities. To achieve this, different initiatives will be launched. One of them will be a national action of communication, mainly addressed at the secondary level. Also, best practices in teaching entrepreneurship will be identified and widely disseminated. The topic of entrepreneurship will soon be included in the official programmes of national secondary-level education.

Moreover, other initiatives are either up-and-running or at the launch phase:

- 1) the **Observatory of entrepreneurial teaching practices** (in secondary and tertiary education), which identifies teaching programmes and awareness campaigns and the teaching institutions involved in this field. The aim is to disseminate practices and information on entrepreneurial teaching.
- 2) the **Academy of Entrepreneurship** is an association of teachers and researchers at universities, technical schools and commercial schools, working mainly in the business field, whose remit is to promote entrepreneurship (practices, experiments, research work, etc.) in the French education system.
- 3) the **Franco-British Club for Higher Education and Training in Entrepreneurship** was created in November 1999. Its aim is to foster entrepreneurship in the training of engineers and managers in both countries.
- 4) the **“Commission for the promotion of entrepreneurship and business creation in the education system”**, part of the National Council for Business Creation, was set up by the Prime Minister's Office. The Commission draws up proposals to mobilise more effectively the business and educational sectors in the task of promoting entrepreneurship and business creation, a multiplier effect for initiatives at all levels of education, and links between research, higher education and innovation.

- 5) the Ministries of Research, National Education and Industry, Finance and Economy have launched several initiatives aimed at promoting **university research** through the creation of innovative companies.

Numerous French regions have launched support projects aimed at fostering the entrepreneurial spirit and a culture of business creation in France. These projects are undertaken in the primary, secondary or higher levels. Mention should be made of the “*Maisons de l'Entrepreneuriat/des Entrepreneurs*” (in Lyon and Grenoble, for example). These are federated structures bringing together several institutes of higher education. Their aim is to promote entrepreneurship awareness and training at teaching institutions. The target group comprises both teachers and students.

There are also numerous other local initiatives, some of which date back many years. At primary and secondary level, initiatives consist essentially of awareness campaigns targeted at a limited number of establishments. Most of the campaigns are started by committed local actors who find the necessary funding and act as facilitators.

Two national schemes designed to foster entrepreneurial spirit among schoolchildren at secondary level deserve mention:

- “*entreprises cadettes*”: this scheme is targeted at first-year pupils, who are given the opportunity to devise business plans, which they do with expert help, and then do computer simulations of business start-ups;
- “*graines d'entrepreneurs*”: this scheme is a partnership between colleges and the French Chambers of Commerce and Industry. Pupils work on their project according to a pre-determined methodology that includes meetings with specialists and professionals.

It is, however, **higher education** that has benefited from the most important measures (see the initiatives at national level described at the beginning of this section).

Germany

Promoting the enterprise spirit and “entrepreneurship teaching” are relatively new subjects and challenges for the German education system. Encouraging initiatives are being worked out at school level, or independently by individual institutions and persons; however, a systematic approach and specific curricula have still to be developed.

There seems to be a widespread consensus that “knowing how the economy works” and “getting more familiar with the idea to become an entrepreneur” are a key to creating jobs. There is further a broad understanding that the traditional separation between the economic and the educational sphere no longer fits in a globalised environment.

However, there seem to be obstacles and sometimes hidden barriers and deficits that are not always easy to overcome:

- Economic topics are too often being put into different boxes: at school level, they are often handled as different (training) subjects, where a more integrated approach is needed.
- Self-motivation is one of the key elements for having success in life, as self-employed or employee. This is not sufficiently reflected in the curricula.

- Teachers' training on the subject of entrepreneurship takes place only on a limited basis or only occasionally.

At the level of **primary school**, special entrepreneurship training is not included in the curricula. There are some initiatives where pupils visit locally-based companies, but nothing systematic. In some cases, there are activities aimed at increasing the capability of self-motivated and autonomous learning.

At **lower secondary level**, existing activities are limited to preparing the students for the world of work. In the most of the federal states, each student (8/9 class) has to undergo a training in industry or at a service-provider. In many schools, specialised teachers are responsible for organising such exercises.

At **higher secondary level** schools are often even more reluctant to initiate and conduct training or curricula in this respect. Only in a few federal states is there a special training module for economic subjects. However, to an increasing extent, this type of education takes into consideration the necessity for a new approach.

The "Junior" project has found a broad acceptance in the German education system. This project provides a special framework for running an enterprise for young students above 15 years of age (*for more information, see Chapter 6*).

Worth mentioning is also the "Go! to school" project, that was established in Nordrhein-Westfalen for students of different levels. Activities include a special info-bus informing about the "culture of entrepreneurship" (around 300 operations took place, and more than 25,000 students were addressed), a set for "starting your own business", the organisation of workshops, etc. This concept has been fully accepted by the students, and the project was now extended for three more years.

As regards **initial vocational training**, there are some elements that can be seen as first steps: for instance, school-leavers are sometimes trained in special "enterprise units" which are organised and operate like a real business.

Finally, at **tertiary level** of education there is, of course, the classical way of teaching entrepreneurship (Master's in business administration, etc.). Besides this, there are more than 30 new university chairs (mostly sponsored by private business) for teaching entrepreneurship.

Greece

It is commonly recognised that until recently the Greek educational system had not attached the necessary emphasis to the employment and/or self-employment of those completing the various levels of education. While it provided know-how and skills, it had not aimed at advancing an entrepreneurial culture.

Specific courses on entrepreneurship were not included in the schools' formal curriculum and it was only at the individual teachers' initiative that some reference to practical aspects of entrepreneurship were presented and discussed.

The prevailing situation in the Greek educational system as regards Education and Training for Entrepreneurship, is characterised by the almost total absence of formal arrangements. However, initiatives are being implemented in various educational establishments across the country.

In the Introduction to the Ministry of Education Operational Plan for the period 2000–2006, announced early in 2001, it is explicitly stated that “development and advancement of entrepreneurship among young people is among the Plan's priorities”. It is planned that entrepreneurship-promoting programmes will be initiated targeting graduates.

The stated intentions of the 2000–2006 Operational Plan of the Ministry of Education suggest that young people should be oriented towards the creation of viable enterprises and that in order to achieve this they should be provided with appropriate skills.

In **secondary education** the measures to be implemented should take into account the specific psychological and social characteristics of young people in this age. Measures both fostering an entrepreneurship culture and more specific ones assisting the creation of enterprises will be implemented.

In **vocational training** programmes and measures of a more direct nature will be introduced.

In **Universities** the emphasis will be on courses providing know-how and skills required for the efficient running of enterprises.

A total of € 20 million has been committed for the period 2002–2006. But human resources, e.g. teachers and training material are, generally speaking, in very short supply.

Ireland

The Irish government has targeted several groups for enterprise creation support. In line with a focus on new start-ups with high-growth potential in manufacturing, technology and internationally-traded services, these groups include university and college graduates, academics who are working on commercialisable R&D projects, and alumni and technologists who have left Ireland. This strategy is particularly developed in Ireland. In addition, special efforts are focused on developing young entrepreneurs at different age levels.

The CEBs and the Second Level Support Services of the Department of Education and Science have drawn up a proposal which focuses on the training of teachers, development of appropriate support materials for teachers and students and the co-ordination of the delivery of Voluntary/Private Sector initiatives. This proposal should enhance the delivery of Enterprise education in Secondary Schools.

The Junior Achievement programme promotes entrepreneurship in education in both **primary** and **secondary schools**. Junior Achievement has a programme for each different age, from five to eighteen years. The programmes are sequential and concepts are re-enforced over a period of years. All Junior Achievement initiatives are taught by volunteers from private sector companies in partnership with the teacher. In the last school year (ending July 2001), 140 schools of primary level took part in this programme.

At **secondary level** enterprise is taught through the school curriculum, through direct teaching of Junior Certificate; Leaving Certificate Vocational Programme (LCVP); Leaving Certificate Applied (LCA); Leaving Certificate Business Syllabus and Transition year. About 500 schools run LCVP and LCA. In summary, secondary school students have, as part of their full education, the specially designed Business

and Enterprise Modules as part of the Curriculum to the end of second cycle. Entrepreneurship is fostered through schools/business links. Specific courses for entrepreneurship are currently the remit of third level through either short courses or long term courses. Efforts to promote youth enterprise in Ireland include the Young Entrepreneurs Scheme (YES), which was launched in 1991 to help stimulate enterprise and innovative activity among secondary school students and to develop entrepreneurial skills by setting up and running a real business. Business 2000 and Careers World Projects are examples of private/public partnership with blue chip organisations linking directly with the education system at Second Level and Third Level. Both projects bring real work, enterprise and business practices into the classroom through print, CD and web technology.

As concerns the **tertiary level**, in order to expose university students to entrepreneurship education several Business Schools have developed courses in Enterprise or Small Business Management. In addition, Enterprise Ireland sponsors an annual national business plan competition to recognise the best business plans developed by university/college students. In 1998-99, almost 8,500 students from 252 colleges and universities participated in the scheme, with teams from every county in Ireland, 85% from business schools and 15% from other faculties.

But what is innovative, in the case of Ireland, is the targeting of universities and Institutes of Technology for “high potential business start-ups” in Ireland’s new Regional Growth Strategy. This includes government funding and support for the establishment of campus incubators, campus venture capital funds, graduate enterprise programmes and support for campus companies. Most of the universities in Ireland have a formal and co-ordinated structure with which to address the entrepreneurial effort on their campus. Others employ an informal structure that also offers students a degree of creativity and innovativeness associated with their studies. Good examples of teaching and promoting entrepreneurship at tertiary level include: Master in Entrepreneurship at the University of Limerick, Dundalk Institute of Technology (*see description in Chapter 6*), Centre for Entrepreneurship Research, Campus companies at Trinity College, etc.

Italy

In the Italian education system, experiences with regards to education for entrepreneurship are of a **supplementary nature**, and are carried out mostly at a local level both by public and private parties. They are numerous and of many different kinds. However, they are in most cases not included in a structured framework, and are not integrated into the Italian schooling system. While there are many examples of good practice, it is difficult to have a complete picture of all operations taking place on a local scale.

The only experience with an impact at national level – and that may be considered as the “**Italian best practice**” in this field – has been the global project promoted by the *Fondazione IG Students*, which in four years of activity has educated 100 000 students and 3 000 teachers throughout Italy. Concerning the themes of entrepreneurship, there is at present no other case history with such a strong presence in the Italian education system.

This programme was closed down on 31 July 2002. The government has decided to stop public funding for this initiative, partly because of budget constraints and as it

was felt that the conditions have been created for similar initiatives to be developed at a local level – thanks to the experience of IG Students – by means of close cooperation between schools and enterprises, and with a financial participation from the business world. For the future it is expected that although the central government is not providing financial support numerous initiatives of this type will flourish at a local level.

The IG Students Programme has been implemented at **secondary** and **tertiary level** of education, and was promoted in all Italian schools and universities. The programme comprised two modules, on a two years basis. The Standard Module was aimed at students aged between 16 and 26 attending high school and university. Students created and managed their own “laboratory” enterprises, which actually produced goods or provided services for a period of 10 months (throughout the academic year). This training was developed by means of tutors from the world of business.

These activities were not included in the national curriculum, and took place outside hours. After a recent reform of the education system, educational institutions are autonomous and must draw up a “plan of training offer” to be presented to students and families. The inclusion of entrepreneurship teaching is now seen by the schools as a means of attracting students who might otherwise choose another institution.

Entrepreneurship activities at the level of secondary and tertiary education are also promoted by Confindustria (the most important Italian employers’ organisation in the field of industry) and by Formaper (a special agency of the Chamber of Commerce of Milano).

Luxembourg

The report for the Luxembourg's National Action Plan for Employment states that the process of creating new businesses needs to be encouraged by raising public awareness of entrepreneurship in schools and in society as a whole. Priority should be given to developing a taste for entrepreneurship among young people, especially schoolchildren and students.

At **primary level**, the compulsory 6th-year French-language programme has an entire unit devoted to starting up in business. The unit is based on a strip cartoon, “*Boule et Bill créent une entreprise*”. The unit makes the “character” of a company accessible to children, using appropriate vocabulary and texts. The cartoon tells how some well-known personalities found their way into business. The adventure helps to explain the role of business in society and introduces some economic vocabulary. The aim is that every pupil passing through the Luxembourg primary school system should take this subject. In order for it to be studied in greater detail, a network of entrepreneurs will need to be set up who are willing to assist teachers in using the cartoon.

At **secondary level**, the aim is to make young people autonomous and responsible, to encourage them to manage a project, and also to transmit the taste for challenge. For this purpose, the project “Entrepreneurial spirit” pursues the following objectives:

- 1) To encourage and to support schools in organising meetings (Open Days) where the students have the possibility to discuss with real entrepreneurs on a number of issues related to the role of enterprise in society. These discussions are previously prepared by means of specific workshops.

- 2) To stimulate young people to create and run their own mini-enterprises, thus discovering and living the different aspects of the life of an enterprise, from conception of a product to sale on the market, passing through all the stages of production.

At **university level**, a steering committee on managerial and entrepreneurial training was set up in November 2001. The committee's remit is to develop two types of “further training” courses in management (MBA executive) and entrepreneurship (intensive training). The curricula of these courses are developed by three universities of the Greater Region.

Concerning the actual situation, two managerial and/or entrepreneurship modules with focus on SME have been integrated last year in the curricula of all four departments at the Institut Supérieur de Technologie.

The “Centre Universitaire” and the “Institut Universitaire International de Luxembourg” are also active in promoting entrepreneurship activities in collaboration with others partners (Chambre de Commerce, Business Initiative, media-industry in Luxembourg).

Netherlands

A special **Commission on “Entrepreneurship and Education”** has been established at a national level. The Commission has a stimulating and co-ordinating role as it focuses on:

- stimulating the awareness and support for entrepreneurship in education;
- identifying and finding solutions for impediments;
- stimulating the development of pilot projects.

Members of this Commission are representatives of government, all education sectors (primary, secondary, vocational and university level) and business and social organisations.

As a support the Ministry of Economic Affairs has allocated about € 8 million for a subsidy aimed at stimulating the development of learning methods/materials for the curricula (maximum subsidy of € 100 000, with an obligation of 40% co-finance) and for other activities, such as seminars, training for teachers etc. (maximum 100% subsidy of € 10 000). As a follow up, good examples of learning methods/materials can be easily copied by other schools, for all the education sectors (from primary school to university level). In 2003 there will be a first selection of good examples. These examples, from the vocational training level, will be adjusted to be used as best practice in the entire vocational training sector, and will be spread bottom up throughout the country with the support of a marketing strategy. If this strategy is successful, other sectors will follow.

At the moment many initiatives are taken at a local or regional level (schools cooperating with business and local authorities), in most cases on a spontaneous basis (there are wide differences between regions and municipalities). Entrepreneurial aspects are included in the educational goals; this is usually not compulsory but optional. A high degree of freedom is given to the schools if they want to address the issue of entrepreneurship, and if so, in which way.

Concerning the **tertiary level**: in academic 1999-2000, six universities out of 15 had their own entrepreneurship chair. And in higher vocational education 30 out of the 72 institutions paid attention to entrepreneurship in their curriculum. This number seems to be increasing.

The idea behind initiatives currently undertaken at a national level is that central government should not impose but facilitate, by offering good examples, materials etc.

Norway

The government's strategy in Norway is to implement entrepreneurship in education at all levels. This became the foundation for the strategy plan developed by the Ministry of Education and Research in 1997, which currently guides education in entrepreneurship at the primary, secondary and tertiary level.

The mission is twofold: (1) to emphasise entrepreneurship as an objective in education and a strategy for learning and training; (2) to motivate and inspire training institutions, municipalities and counties to plan and accomplish entrepreneurial and innovative training together.

This policy should be accomplished as a common vigorous pull between the education sector, the remaining public sector and the business and industry sector. Major commitments include:

- Pupils' enterprises
- Young enterprises
- Partnership agreements between schools and businesses
- Courses in working life knowledge and entrepreneurship (training of teachers)
- One-year courses in entrepreneurship for undergraduate students
- Major in entrepreneurship for business and engineering students
- Intensive courses for potential entrepreneurs

In **primary schools** there are many examples of pupils' enterprises, and other entrepreneurship initiatives can be found in primary schools. More than 1000 schools (of a total of 3200) are running pupils enterprises in primary and lower secondary schools.

At lower **secondary level**, about 20% of schools in Norway claim to have one or more *pupils' enterprises*. However, the quality of these enterprises varies considerably. At higher secondary level, one in three schools report having one or more *Young Enterprises*. In 2001/2002 it is estimated that 7000 students between 15-18 years old (approx. 5% of total) will create around 700 young enterprises. Nearly every young enterprise has a mentor from the local business sector. Enterprise activities are more commonplace among pupils taking vocational type courses.

At **tertiary level**, about 15 different institutions offer entrepreneurship courses. In most cases entrepreneurship is offered as short courses giving 2-4 credits (a one-year course consists of 20 credits).

Portugal

A number of actions whose objective is to foster entrepreneurship (seminars, conferences, visits) are currently being carried out by the Ministry of Economy in cooperation with the Ministry of Education, as well as by private organisations (Enterprise associations) which have close links with educational institutions. Nevertheless, these actions are not included in the framework of the national education system.

While at primary level there are no specific measures aimed at promoting entrepreneurship, in **secondary schools** measures stimulating entrepreneurial attitudes and skills have a very limited or occasional application. At this level of education there is a component linked to building initiative and spirit of entrepreneurship that is developed within studies of economics and social business. Here, areas of business activity such as management, marketing and accounting are included both in courses of higher level and in technical courses aimed at introducing students to professional practice. In this context, the aim is to contribute to the development of entrepreneurial behaviours that will be helpful in future business.

At **tertiary level**, there are a number of programmes on entrepreneurship and management training, which are autonomously developed by some institutions and are especially offered to potential entrepreneurs, but also attended by the teachers.

For instance IFEA – Institute for Entrepreneurial Advanced Training – delivers a programme that is intended for entrepreneurs who are head of company, manager, technician, or recent graduates. This course has very highly-qualified teachers. During 2002, two hundred students are expected. The previous editions had very good results in terms of business creation.

Spain

It is at the level of secondary education and in initial vocational training that there is the greatest intensity of training in entrepreneurial skills.

At a policy level it is of particular importance to mention the recent Organic Act 5/2002 on Qualifications and Vocational Training, whose objective is to set up an overall system, one of the main purposes being to promote the skills for entrepreneurial activities and self-employment.

Although some information is included in the national statistics, for some aspects it is difficult to acquire up-to-date data covering the whole of Spain, given that there are 17 Autonomous Communities each running education independently within its own territory. Regulations on education are national, but degrees of freedom are allowed to the Autonomous Communities in their implementation.

At the level of **primary** education there are no generally applied measures specifically designed to promote the spirit of enterprise. However, educational objectives at this stage do include skills relating to problem-solving, teamwork, communication, the development of creativity, etc.

At **secondary** level (16-18 years) the state measure of greatest relevance to training in entrepreneurship is the inclusion in the humanities and social sciences curriculum of two subjects taken consecutively, namely Economics and Economics and Business

Organisation, attended by more than 160 000 students in 2001-02. These subjects fulfil two functions. Firstly they prepare students who are intending to study economics or go to business school, and secondly they provide basic training in business management (particularly the second of the two) for students who will not go on to higher education.

In **initial vocational training** (16-20 years), there are vocational modules promoting entrepreneurship and the business culture. In some the treatment is of a general nature and in others a concrete, specific vision is given of the sector or subsector of production in question.

The vocational module on “training and work orientation” is an educational measure to promote the integration of graduates (200 000 students in 2002) in productive activity, both as employees and on a self-employed basis. All the training courses are compulsory in both the higher and the intermediary levels.

The vocational module on “administrative management and marketing for small enterprises” is specifically designed for the self-employed and the creation of businesses. It was attended by more than 70 000 students in the last academic year.

There are other vocational modules in which fostering entrepreneurship is dealt with from the specific point of view of the sector of production or services in question. Many of them specifically include the issue of choosing which business to start.

Aspects related to promoting the enterprise spirit in **universities** may be found on three different levels:

- 1) general courses in business management (offered in practically all Spanish universities);
- 2) undergraduate courses, masters and post-graduate courses specifically addressing entrepreneurship within business management studies (especially those linked to the industrial sector but also, to a lesser extent, the services sector);
- 3) direct support and services for entrepreneurs.

Sweden

In Sweden the school system is decentralised. The framework for education is decided at national level, but the municipalities are responsible for schools of primary, secondary and adult education level. The national curriculum states that school education must contribute to the development of skills and attitudes that are normally used to describe an entrepreneurial person, such as initiative, ability to work individually and in group, problem-solving, sense of responsibility, etc. At the same time the choice of working methods and learning materials is made at local level.

There are many municipalities where schools have chosen to work with entrepreneurship in education, both at primary and secondary level (for example in the county of Västerbotten, *see Chapter 6*). Furthermore there are a number of organisations external to the education system working with promoting entrepreneurship. For example “Flashes of Genius” at primary level, Young Enterprise and Swedish Foundation of Enterprise Education at secondary level, “The Greenhouse” at tertiary level and finally Open for Business, which is an organisation working with building an entrepreneurial culture both within and outside the education system.

At university level too, only the framework is decided at national level, whilst the provision and operation of the education is decentralised to the universities and university colleges. For that reason it is difficult from a national level to get an overview of all courses and programmes that include entrepreneurship. A rather old survey shows that in 1996 at university level around 20 programmes were defined as entrepreneurship education and around 40 shorter courses (five to ten weeks) with entrepreneurship education (the survey looked only at economic and technical institutions).

The Swedish National Agency of Education (Skolverket) has received two assignments from the government to work with:

- a) To increase the quality of the vocationally-oriented education of secondary school. In this mission is included to improve contact between schools and working life, which also can imply the promotion of entrepreneurship education. The budget is SEK 53 million in three years. Activities included in the project are conferences, dissemination of best practice, training of teachers, implementation and evaluation of school projects, setting up a network of researchers etc. A compulsory project assignment, where cooperation with local working life is encouraged, has also been introduced in upper secondary school.
- b) The National Agency for Education has, in response to a request from the Government, developed an action programme to promote contacts between primary school and the working life. The programme suggests that agreements on how this cooperation can be enhanced should be signed between local organisations and schools. A pilot project will be run in around 10 municipalities in 2002 and 2003. The next step for the National Agency for Education is, with those pilot experiences as a basis, to carry out a nation-wide activity to implement the action programme in all municipalities and schools.

Both initiatives will be carried out at regional and local level and in close cooperation with representatives from industry, trade unions and branch organisations.

The government will also in the near future give the Swedish Business Development Agency (NUTEK) a mission to run a programme to promote entrepreneurship. This programme will for example include activities promoting the entrepreneurial spirit amongst young people and links between schools and business. The budget for the programme will be within the range of SEK 6-12 million; a final decision remains to be taken.

However, although there are national initiatives in Sweden to promote entrepreneurship education, the degree of commitment and the scale of such initiatives are still modest.

UK

Education policy in the UK is developed **autonomously** in the different countries (England, Wales, Scotland and Northern Ireland).

In **England**, the 2000 revision of the National Curriculum identifies Enterprise and entrepreneurial skills as one of the additional aspects of the school curriculum that should be promoted. Schools are free to choose how to teach entrepreneurship in ways

that suit the needs of their pupils and there is currently no statutory requirement as such upon schools to do so.

The most explicit opportunities for teaching enterprise skills within the statutory curriculum (5-16) are probably within the subjects of “Citizenship” and “Design and technology”. However, enterprise projects could also be incorporated into other subjects, where teachers are aware of the issues and motivated to do so. From age 14 onwards, students also begin to take optional courses, usually leading to qualifications. Among these, courses in economics and business studies often provide the best opportunities for teaching enterprise and entrepreneurship. In further education colleges, which many students attend between 16 and 19, there is a vast range of vocational courses, some of which are directly relevant to entrepreneurship.

In England, although there are no required programmes in Primary and Secondary schools, a wide range of programmes are available, i.e. Young Enterprise, NFTE UK, Young Foresight, Changing Climates and Changemakers, although many of these initiatives are local and no central record is kept of activities in detail at school level.

There is a national mechanism in England (which came into existence in April 2001) to promote education–business links. This responsibility is held by the Learning and Skills Council, the body which funds all post-compulsory education and training, and which includes a consortium of Education Business Link Organisations in each of its 47 local areas. Each consortium has to produce a development plan of its proposed activities linking schools and colleges to businesses. Many of the early development plans contained ‘Promoting Enterprise’ within their proposed range of activities.

Within this structure, Education Business Partnerships are autonomous local organisations which organise work experience student placements and teacher placements in business, and broker individual links between local schools and businesses.

In **Wales**, there is an Entrepreneurship Action Plan which addresses all levels of education, starting from primary school. Among its objectives, this three-year Implementation Plan aims to equip every school and college in Wales with the necessary materials, resources and trained teachers or lecturers so that all 5-19 year olds in Wales receive on-going entrepreneurial education.

In **Scotland**, the Schools Enterprise Programme began in 2001 as a partnership between the Scottish Executive, Education Authorities, businesses, schools and teachers. Schools Enterprise, which lasts 3 years, will reach every primary school pupil. This programme will be rolled out so that every pupil will have had at least two enterprise experiences by the end of their primary education. Moreover, over 500 school teachers in the academic session 2001/02 had the opportunity to participate in a national enterprise awareness programme, the main focus of which will be placements within local businesses.

In secondary schools in Scotland, organisations such as Young Enterprise Scotland, Business Dynamics, Shell LiveWIRE and Achievers International offer a range of opportunities in enterprise for young people.

The Programme for Government of the **Northern Ireland** Assembly contains a commitment to equip young people with the skills and qualifications to gain employment in a modern economy. There is also a strong commitment to promote partnerships. Examples are with the work of Young Enterprise Northern Ireland, which is becoming an integral part of all activities involving business–education links.

At **tertiary level**, the principal Government-funded programme in the UK is Science Enterprise Challenge. This programme was launched in February 1999 to establish a network of centres of excellence in UK universities specialising in the teaching and practice of commercialisation and entrepreneurialism in the field of science and technology. The overall objectives and targets of the programme are : the provision of a significant level of enterprise training to over 40,000 students at undergraduate, postgraduate, and professional level; the development of collaborative links with up to 500 companies; the foundation of up to 700 new spinout companies; and the registration of over 200 new patents.

Universities are autonomous institutions and many already offer modules and courses in entrepreneurship on their own initiatives. According to a slightly dated survey, in 1999 38% of higher education institutions in England offered courses in entrepreneurship. A further 20% offered teaching in entrepreneurship within other courses focused mainly on another subject, or occasional seminars on entrepreneurship.

6. Identification of concrete examples and models

A distinction can be made between **policy measures** – taken at national level – that aim to promote the teaching of entrepreneurship by means of creating a framework or providing incentives, and specific practices or programmes.

At **policy level**, some initiatives may be highlighted here that – although they can hardly be labelled as “best practice” given that in most cases activities have been started only recently – provide an interesting example of how this issue can be tackled at the level of central governments.

For instance:

- **In France**, the creation of an **Observatory of teaching practices for entrepreneurship** in secondary and higher education, under the supervision of a steering committee composed of different Ministries, agencies and associations, aims to identify actions, collect data on programmes and courses, disseminate information, facilitate the exchange of experiences (www.entrepreneuriat.net).
- **In the Netherlands**, the creation of a **special Commission** on 'Entrepreneurship and Education' (from primary to university level) aims to promote pilot projects and to collect good examples that can be easily copied by other educational institutions. Financial support is provided by the Ministry of Economic Affairs for the development of learning methods and materials, and for other activities (such as seminars, teachers' training, etc.). The idea is that central government should not impose, but facilitate.

As concerns **specific practices and programmes** relating to the teaching of entrepreneurship, a great number of interesting initiatives and examples of good practice can be found all over Europe. Some of them have been previously presented at the Forum in Nice/ Sophia Antipolis of October 2000.

However, while it is relatively easy to identify cases of good practice that can be proposed as useful models, it is more difficult to come to a definition of “**best practice**”, which could be seen as the best way to achieve a certain, pre-defined goal.

Identifying best practice involves making use of objective elements, including quantitative data, which are hardly available in the area of education for entrepreneurship. Choosing a best practice means comparing different practices on the basis of such objective and quantifiable elements, and using benchmarking as an instrument.

This project mainly relies on a qualitative analysis. This is due to the specific nature of the subject itself, but also to the difficulty in obtaining comparable quantitative data on entrepreneurship programmes, activities and courses. This point is developed more specifically in the chapter on “methodology”.

A “softer” approach has therefore been adopted for this project. The working group has agreed on a number of general criteria that would define a “best practice”, and that could be applied to the area of entrepreneurship education. This was achieved by using as a basis – and by adapting – a list of criteria for best practice in relation to **Business Support Measures** which had been previously defined by a Working Group

on Best Practice Methodology in the context of the Concerted Actions programme of the Commission.

Best Practice Criteria agreed by the Working Group on "Education and Training for Entrepreneurship"

To be a 'best practice':

- (1) The practice should exist already.
- (2) It should have clearly identifiable aims and objectives.
- (3) It should be user-friendly and appealing to participants.
- (4) It should be adaptable and transferable.
- (5) It should be sustainable and have a long-term perspective.
- (6) Its results should be identifiable and capable of evaluation.
- (7) Its being coherent with other good practices, both in concept and delivery, would be advantageous.
- (8) Over a range of relevant indicators, it should clearly out-perform other practices in terms of efficiency and effectiveness.
- (9) It should be capable of being continuously improved.

As a part of this project, the following examples have been selected and proposed by the national experts of the working group as best practice cases for their respective countries. They are presented here as possible **models**, which are compatible with the criteria listed above.

In order to provide a clear structure and to facilitate the reading, these examples have been grouped into the following categories:

1. Entrepreneurship in primary and secondary schools.
2. Initial Vocational Training at the level of secondary education.
3. Learning by doing and Mini-Enterprises.
4. Cooperation between educational institutions and the business world.
5. Training of teachers on the subject of entrepreneurship.
6. Encouraging entrepreneurship and start-ups at university level.

Theme 1: Entrepreneurship in Primary and Secondary Schools

- From Primary 1 to plc, Scotland (UK)

In recent years, **an infrastructure** has been put in place in Scotland in order to provide enterprise education from primary school. There are programmes in place addressing school children from the age of 5 onwards that have a wide coverage in the Scottish system. This has been possible thanks to both public and private funding. High profile members of Scotland's entrepreneurial and corporate elite are donating £2.5m from 2001 to 2004, to be matched by the Scottish Executive, to provide every primary school pupil in Scotland with at least two enterprise experiences by the age of 12. The Scottish Executive has recently announced that £40m will be made available during the three years 2003-2006 for vocational training and enterprise education in schools, which will extend the entitlement to four enterprise experiences by the age of 18. Over 80 Enterprise in Education Advisers are now in place across Scotland, working with schools and the business community, making enterprise a core part of the Scottish curriculum. *Contact (1): Scottish Executive, Mr. Michael Cross, tel. +44 141 242 0107, fax +44 141 242 0149, e-mail: michael.cross@scotland.gsi.gov.uk ; Contact (2): Careers Scotland, Mr. Gordon McVie, e-mail: info@careers-scotland.org.uk, www.careers scotland.org.uk*

- The Västerbotten Project 'PRIO 1' (Sweden)

During 1997-2000, the Municipality of Skellefteå School Project has **addressed the entire educational system**, from pre-and compulsory basic level to upper secondary and post-secondary level. Some 50 teaching projects were started in schools, 42 teachers received specific training (through the 'Crea Pilot' initiative) and a hundred businesses and other organisations were involved in school projects. Most projects that were run in Skellefteå 1997-2000 are now integrated in the schools' everyday activities. The overall experience has now been developed into a regional project, the Västerbotten 'PRIO 1' Project, run by the County Administration of Västerbotten (northern Sweden). The new programme supports more than 100 local projects running in the 15 municipalities of the region. In addition, numerous activities are arranged, such as 8-day teacher in-service training for all local project leaders, meetings between schools and business, etc. As a result, more than 550 businesses in the county of Västerbotten are now involved in school activities. More than 1200 employees in schools and 7400 students/children have taken part in education fostering entrepreneurship. A number of active networks have been built between the schools in the county, and between schools and local businesses. *Contact: County Board of Västerbotten, Ms. Eila Eriksson, tel. +46 90-10 73 20, fax +46 90-10 72 00, e-mail : eila.eriksson@ac.lst.se, http://www.prio1.nu/*

- The "Entrepreneurial City" in Primary Schools (the Netherlands)

The Entrepreneurial City is a project based on learning by doing. This has been put into practice by creating various **"learning landscapes"** in the Entrepreneurial City. A learning landscape is a project in which children are trying to accomplish a certain goal, e.g. setting up their own power station at school or starting their own third world shop. These projects appeal to basic entrepreneurial qualities, such as independence, creativity and cooperation. A critical success factor is the involvement of people outside the school (parents, entrepreneurs etc.). Nowadays more than 30 educational landscapes have been developed and several schools in different parts of the

Netherlands have participated. *Contact: Senter International, Mrs. M. Jansen, tel. +31 70 361 0220, fax +31 70 361 4430, e-mail: m.jansen@senter.nl*

- Leaving Certificate Vocational Programme for Second Level Schools (Ireland)

In Ireland, the Leaving Certificate Vocational Programme (LCVP) for Second Level Schools is a priority of the Department of Education and Science and is designed to give a strong vocational dimension to the Leaving Certificate (established). The programme combines academic study with a dynamic focus on self-directed learning, enterprise, work and the community. **A large proportion of schools (507) and students (31 500)** are involved. A dedicated team of teachers manage the programme, which links with the local businesses and the local community and is supported by the central government. The programme has a cross-curricular, interdisciplinary emphasis. Its approach is very much based on learning by doing, its overall objective being to produce the skills and qualities of self-reliance, innovation and entrepreneurship. *Contact: Blackrock Education Centre, Mr. Michael Garvey, tel. +353 1 2301673, fax+353 1 2301612, e-mail: garvey@m@eircom.net, slss@blackrock-edu.ie*

Theme 2: Initial Vocational Training at the level of secondary education

- Administration, management and commercialisation in the small enterprise (Spain)

This is theory-and-practice training specifically **addressed to self-employment and creation of enterprises**. This training is compulsory for all the students in Intermediate Vocational Training (Compulsory Education, 16 years of age + 2) and by those in Advanced Vocational Training (Baccalaureate, 18 years of age + 2) in 45 specialities corresponding to different sectors of economic activity. In the school year 2000-01, 3 689 groups of students received this training. It is possible to estimate from this figure that more than 100,000 students, spread across about 2,000 public and private schools, received this module. The aims of the training are nation-wide and its contents are jointly established by the Ministry of Education and by the Autonomous Regions, with the possibility to adapt these contents to their productive environment. Carrying out a project about the creation of an enterprise is included in this training. In the opinion of the various agencies involved, placement in the productive system, including self-employment, is improving remarkably. *Contact: Ministerio de Educación Cultura y Deporte, Centro Nacional de Recursos para la Orientación Profesional, tel. +34 91 701 8465, e-mail: sop@educ.mec.es, <http://www.mec.es/fp/cnrop/index.html>*

- “Virtual Enterprises” in the Sivitanidios Technical School of Athens (Greece)

This specific case is defined as a “best practice” example by the Greek Ministry of Education and offered as a guide for the entire vocational training system. The introduction of **virtual enterprises** as a complement to other training methods was attempted in order to widen the scope of Practical Training for students of secondary education. The trainees participating in the scheme attend a theoretical course during the morning hours and operate the virtual enterprises in the afternoon. The results of this scheme will be made available to all other interested technical schools in an effort to promote Entrepreneurship nation-wide. *Contact: Sivitanidios Public School Of Trades & Vocations, Mr. Konstantinos Antonopoulos, tel. +30 210-4819158, 210-*

4814456, fax: +30 210-4819158, e-mail: kosan@otenet.gr,
<http://www.sivitanidios.edu.gr>

Theme 3: Learning by doing and Mini-Enterprises

- Young Enterprise Europe ⁴

Young Enterprise Europe (YEE), is an international organisation established in 1993, which includes non-profit organisations from 20 countries throughout Europe and the Mediterranean area. Its overall aim is to diffuse a mentality for entrepreneurship among young students. Members of Young Enterprise organise at national level programmes in schools that are based on “learning by doing”, by means of the **creation of mini-companies by the students**. These programmes normally address the secondary level of education, but also universities in some cases. European events are also organised on a regular basis. Overall, about 600 000 students are involved in YEE programmes each year. *Contact: JA-YE Europe, Ms. Caroline Jenner, tel. + 32 2 626 6011 or + 32 2 626 6174, fax + 32 2 640 8578, email: ja-ye.europe@skynet.be*

- Project “Junior” -Young Enterprises Initiate – Organise – Implement (Germany)

This project provides a **special framework for running an enterprise** for young students above 15 years of age (-20). They operate like a real enterprise, sell shares, conduct market research, develop a product/services. In 2002, Junior was operating in 13 federal states, since the start in 1994 more than 12,000 students were participating in about 1000 enterprises. The practical relevance and the achievement of the project can be demonstrated by the fact that every second participant expressed a positive attitude and saw him/herself as a potential entrepreneur. *Contact : Institut der deutschen Wirtschaft Köln, tel. +49 (0)2 21/49 81-7 07, fax +49 (0)2 21/49 81-7 99, e-mail: junior@iwkoeln.de, <http://www.juniorprojekt.de>*

- The IG Students Programme (Italy)

Students participating in the IG students Programme create and manage their own “**laboratory**” enterprises, which effectively produce goods or provide services for a period of 10 months. Young people really create and manage their own enterprises – under the supervision of Tutors and Link Teachers (one for each enterprise) – underwriting the share capital, taking on the company roles and producing and selling products or services. Each enterprise comprises between 6 and 15 students and their shares may also be underwritten by third parties via the IG students “Stock Exchange”. Although these laboratory enterprises are not registered, they are to all intents and purposes real enterprises, operating in a protected environment. The laboratory enterprises put their business ideas to the test by taking part in local, national and international fairs.

This programme was closed down on 31 July 2002. The Italian government has decided to stop public funding for this initiative, partly because of budget constraints and as it was felt that the conditions have been created now for similar initiatives to be developed by means of partnerships taking place at a local level thanks to the experience of the IG Students programme, which is proposed as a model.

⁴ See footnote at page 21.

- Mini-enterprises and ICTs (Belgium)

In 2002-2003, the Minister for Secondary Education of the French Community helped with the expansion of the “mini-businesses” programme in Wallonia and Brussels. This was made possible by means of a partnership between the Training Institute for the Professions and SMEs, the Inter-University Centre for Further Education and “*Jeunes Entreprises asbl*”. This collaborative effort entails the further development of the “**information and communication technology (ICT)**” aspect for mini-enterprises in the form of training for their ICT directors, an increase in electronic communications between mini-enterprises, and the promotion of electronic commerce among existing mini-enterprises. A particularly important feature will be the creation of a “virtual market” where mini-enterprises can advertise and sell their products. *Contact: Jeunes Entreprises asbl, tel. +32 2 245 13 80, fax +32 2 245 01 87, e-mail: lje@lesjeunesentreprises.be, www.lesjeunesentreprises.be*

- Practice Firm as Learning Environment in Entrepreneurship Education (Finland)

A practice firm is a training method based on the **simulation of entrepreneurial life** in order to study the changing operations and the preconditions of running a successful enterprise. The target groups for practice firms are the unemployed, students at commercial and technical schools, high schools, colleges and universities, employees in “real” companies, people with disabilities, and future entrepreneurs. In cooperation with the teachers and experts of working life (learning network), the students plan and set up the operational system of an enterprise and run it like a real firm. The students work in facilities similar to a real office. They have various roles as managing director, manager of sales, marketing, accounting etc. according to the organisation of the firm. The roles change so that the students have the opportunity to work in different positions. Every practice firm has a real firm as a mentor company. *Contact: FINPEC, Mr. Jari Viitasalo, tel. +358 8 884 8518, e-mail: jari.viitasalo@merikoski.fi*

Theme 4: Cooperation between educational institutions and the business world

- The “CREA” programme (France)

The “CREA” training programme is implemented in the Marketing and Management Departments of several University Institutes of Technology (IUTs). The aim is to foster an enterprise culture among students and promote entrepreneurship. Students take an active part in setting up, developing or taking over a business by **helping the entrepreneur to implement his/her business plan**. The cases are real, and a partnership is created comprising professionals (consultants, accountants) and representatives of business creation networks acting at a local level. Entrepreneurs provide the subject matter (with the help of their networks), and partners assist the students throughout the programme. *Contact: CREA-IUT, Mr. Jean-Paul Cap, e-mail: Jean-Paul.Cap@iutquimp.univ-brest.fr, www.crea-iut.org*

- Introductory courses in entrepreneurship taught by experts from the business world (Luxembourg)

The “*Introduction to entrepreneurship*” programme was developed in technical secondary schools. Its aims include making students familiar with the various sectors of economic activity, providing them with specialised knowledge and techniques, and preparing them for in-company training. In the first and second years, the modules are

jointly developed by teachers and by **external experts from the business world**. The programme is essentially based on case studies prepared by the experts in the light of their professional experience. This programme has succeeded in fostering direct contacts and tangible cooperation between schools and enterprises. *Contact : Commission nationale pour les programmes des formations administratives et commerciales, Mr. Lucien Clement, tel. +352- 478- 5286, fax +352-241884, e-mail: clement@men.lu, www.men.lu*

Theme 5: Training of teachers on the subject of entrepreneurship

- Teacher Training in Enterprise Education at the University of Strathclyde, Scotland (UK)

The distinctive feature of this programme is that **teachers run an enterprise** in much the same way as would school pupils. There is little prescription given to the teachers/students except for a task which requires them to learn by doing. They then select their enterprise, write their own business plan and take all decisions. Most of the time they do not attend classes but consult with the tutor when the need arises. The students are required to present a report and a balance sheet as well as a written assignment. The assignment covers the skills and attitudes learned through the enterprise as well as how this experience can be transferred and used as enterprise education in schools. *Contact: University of Strathclyde, Mr. Brian Twiddle, tel. +44 141 950 3566, fax +44 141 950 3919, e-mail : natcentre@strath.ac.uk, www.natcentre.org.uk*

Theme 6: Encouraging entrepreneurship and start-ups at university level

- Business plan competition of the city of Vienna - Wissenschafts Zentrum Wien (Austria)

All participants in the Business Plan Competition are undergraduates in the final cycle of their degree course. The competition involves **devising a plan for setting up a business**. The aim is to motivate students to work out a business plan in multidisciplinary teams (for instance, electrical engineering students working with business administration students, etc.). The main purpose is to develop the capacity to draw up a business plan and to present (and represent) it convincingly to interested stakeholders (e.g. banks or investors). Motivating the students to actually go ahead and set up the business is secondary to the main purpose and, while it is a by-product worth pursuing, it is not the main point of the exercise. *Contact: Wissenschaftszentrum Wien, Mag. Andrea Holzmann, tel. +43 1 405 55 380, fax +43 1 405 55 38/25, e-mail: andrea.holzmann@wzw.at, www.wzw.at*

- Study Plan for Norwegian Entrepreneurship School (Norway)

This programme is in three phases. Phase one is the spring pre-course, phase two is the **internship with training in other countries** and phase three is a two-day seminar. During the spring course, students are expected to make a preliminary business plan. The internship is an intensive three-month period conducted in USA and Singapore where the student works in a start-up company while attending classes. During this time, the students are trained to write and produce complete business plans. The final phase is after the students have returned home from their internships. They are given a project that is to be completed and presented at a seminar. The

students will have an opportunity to talk to venture capitalists and others that can give them valuable advice for the future of their business plans. *Contact: Gründerskolen Universitetet i Oslo (Norwegian School of Entrepreneurship), Prasantha Devulapalli, tel. + 47 22 84 41 32, e-mail: info@grunderskolen.no, http://www.grunderskolen.no/*

- The teaching of entrepreneurship at undergraduate level across different disciplines and courses - Dundalk Institute of Technology (Ireland)

At the DKIT, entrepreneurship as a module in its own right appears **in more than twelve different courses**, at Certificate, Diploma, Degree and Postgraduate levels, and is offered across five different academic departments. Courses include: Business Studies; Accounting and Finance; Community Studies; Cultural Resource Management; Engineering; Science Degree; Sports and Community Leadership; etc. This means that almost without exception, each of DKIT's 2,800+ full-time students will have the option of completing an entrepreneurship module at some point in their undergraduate studies. While the content of the entrepreneurship syllabus will vary slightly between courses and levels, the core of the module tends to remain unchanged. The undergraduate syllabus for entrepreneurship is delivered over two semesters. The first contains the knowledge-based theory, while the second focuses more on practical application including working in teams to develop a business plan for a new product or service. *Contact: Centre for Entrepreneurship Research-Dundalk Institute of Technology, Dr. Colette Henry, tel: +353 42 9370506, fax +353 42 9331163, e-mail: colette.henry@dkit.ie*

- Temporary Entrepreneurial Position (TOP) - University of Twente (the Netherlands)

The programme offers to potential/starting entrepreneurs **a variety of different facilities** without charge to keep the start-up and operating costs as low as possible during the first critical year. One of the facilities which is crucial for the TOP programme is to tap in to the University's knowledge potential in the field where the business or product idea is based. By offering the entrepreneur a physical place in a research group the knowledge is easily accessible. The TOP programme is a tailor-made programme for the starting entrepreneur, and in this respect there may be differences in the type of support provided that originate from particular needs of the entrepreneurs. *Contact: University of Twente, tel. +31 53 4894278, fax +31 53 4892000, e-mail: j.w.l.vanbenthem@utwente.nl, http://www.utwente.nl/projecten/TOP*

- Post-degree in entrepreneurship (Portugal)

This is an initiative of INDEG / ISCTE - Institute for the development of company management of the High School of Labour and Company Sciences (Lisbon). This post-degree aims to promote the spirit of enterprise by developing the relevant qualities and skills. It has as specific goal to **form entrepreneurs, consultants and investors**, developing the topics concerning the creation of new industries, innovation and new business entry. The course is supported by practical examples taking place in real life, with discussion and presentation of experiences by the protagonists. This post-degree has five cycles that are followed by the module "Elaboration of a Business Plan", in which the teacher is supported by a team of tutors and experts from other areas of study. *Contact: INDEG/ISCTE, Prof. José Paulo Esperança or Dr. Rui Ferreira, tel. + 351 21 782 6100, fax + 351 21 793 8709, e-mail: indeg@indeg.iscte.pt, www.indeg.org*

7. Policy conclusions and recommendations:

In addition to the analysis developed in Chapter 5 (*see in particular the concluding remarks*), the following main conclusions can be drawn from this work:

The European level:

- ➊ A **European statement** on education for entrepreneurship, highlighting the main challenges to be met, is considered by the Working Group as a powerful incentive in order to steer changes at national level.
- ➋ A commonly accepted **definition for “entrepreneurship teaching”**, specifying the objectives of this type of teaching at the different levels of education, needs to be agreed that can be used as a reference and a justification for the development of policy action in Europe in this area. A proposal for this definition is provided in Chapter 3 of this Report.

The National level:

- ➌ There is today in almost all countries – although in varying degrees – a **policy commitment** at governmental/ministerial level to promote the teaching of entrepreneurship in the education systems.
- ➍ However, there is in some cases a need to **improve coordination** between the different ministries and agencies involved in entrepreneurship and education.
- ➎ The development of **indicators** and the collection of **quantitative data** in this field are still very limited. In most cases, precise figures are not available at a national level on the number of schools and teachers involved in entrepreneurship courses and programmes, and on the number of students participating in these schemes. As a result, it is currently impossible to measure in precise and objective terms the effort that is being produced, both at national level and – even more so - at European level.
- ➏ The **evaluation of measures** undertaken is mostly done on a limited basis or occasionally. Also, there is no widely accepted measure of outcomes (for example, entrepreneurial capability) against which many of these activities can be judged.
- ➐ **Links between schools and the world of business** aimed at promoting entrepreneurship are widely developed in most countries, in many cases as a result of initiatives taken at a local level and independently by individual organisations or educational institutions. However these links need to be further increased, as cooperation between schools and businesses or business associations is a privileged means to introduce entrepreneurship in practice into the educational pathway.

The education systems, and existing programmes:

- ➡ Initiatives aiming at promoting the development of an entrepreneurial spirit in pupils are still rare at the level of **primary school**, although a number of examples of good practice can be found in this area.
- ➡ This type of teaching is more frequent in **secondary schools**, very often depending on initiatives taken individually by the educational institutions.
- ➡ **Initial vocational training** systems of secondary level – in most countries - are currently not sufficiently orientated towards self-employment and entrepreneurship.
- ➡ Entrepreneurship training at **university level** is mostly focused on students following economics and business courses. This type of training should be made more generally available, in particular within courses on a broad range of different subjects (for instance science, engineering, arts, etc.)
- ➡ The current provision of specific **training for teachers** on the subject of entrepreneurship is largely insufficient, both as regards initial training in teachers' colleges and further vocational training available for the teachers during their career. This is a major obstacle to introducing the concept of entrepreneurship into the classes.
- ➡ Schemes based on “**learning by doing**” - by means of pupils and students creating and running mini-enterprises - are widely used in many countries to develop entrepreneurial skills, in particular at secondary level. However, they should be better integrated into the education systems and be more generally available.
- ➡ There is a **deficit of private funding** for entrepreneurship programmes in Europe. Moreover, the private sector tends to invest mostly at university level and in fields related to science and technology (as the return for investment is seen as more certain), while suitable investment should also be encouraged at the lower levels of education.

General remarks:

- ➡ All young people should be provided with entrepreneurship **learning opportunities** within or in addition to the mainstream curriculum during their school career. If we want to reach this ambitious goal, there is a need to further **transform the education systems** from the inside. Revising the national curriculum, offering assistance or incentives to the schools, providing appropriate training for teachers and promoting “learning by doing” can be some main instruments for achieving that goal.
- ➡ There has certainly been a significant shift in culture, as entrepreneurship is now widely recognised as an important issue to be taught. Things are moving rapidly in this area. While the current momentum needs to be maintained, there is still a strong need for improvement. What is still lacking in most cases is a **coherent**

framework, so that existing activities and examples of good practice can have a place in the education system and **be generally available**.

Therefore, and bearing in mind the main findings of this work, the following is recommended:

- (1) It is necessary to stimulate the debate on entrepreneurship education in Europe - also by means of disseminating the contents of this work - and to affirm the importance of increasing policy action in this area. To this end, it is proposed that a “**European Day of Entrepreneurship Education**” is organised with parallel initiatives at European level and in each country.
- (2) There is a need to further promote the exchange of good practice in this area at European level. To this end, the creation of **permanent networks** between experts, representatives of public administrations and educational institutions should be encouraged.
- (3) **International expertise and programmes** in the area of entrepreneurship education (for instance, programmes like *Young Enterprise*, *Junior Achievement*, etc.) should be further disseminated, as they can provide an excellent background for new initiatives to be taken both at a national or local level and/or by individual educational institutions.
- (4) It is crucial for future policy action in this area that **precise, comprehensive and objective quantitative data** are developed. In their absence, it will be difficult in the coming years to monitor progress accomplished in Europe. The national administrations, the European Commission and all the organisations concerned are called upon to improve their efforts in this direction. In particular, an **Action Plan** for the collection of data should be established at national level by each country.
- (5) While quantitative data and statistics should be firstly produced at national level, establishing a **European Observatory** on education for entrepreneurship will also be a necessary step.
- (6) The **evaluation** of the impact of ongoing measures needs to be improved at all levels. There is a need to further elaborate indicators of “*output*” and clear benchmarks in this area. Some form of **pan-European** evaluation could also be envisaged.
- (7) More initiatives and programmes at the level of **primary education** – using a soft approach to entrepreneurship (*see the definition of entrepreneurship teaching in Chapter 3*) – need to be developed and made generally available in the schools.
- (8) The provision of specific **training for teachers** needs to be greatly increased, as its current insufficiency creates a major obstacle to the implementation of entrepreneurship programmes and activities. If teachers are not adequately trained, motivated and provided with on-going support, little progress can be achieved in this area.

- (9) Schemes based on **learning by doing**, including the creation of **mini-companies** by the students, should be further promoted and be widely available **at all levels of education**.
- (10) A **framework** for entrepreneurship education needs to be put in place at national (or regional) level where specific initiatives can be developed, allowing for a long-term perspective, sustainability and eventually for a real impact. Existing measures should be integrated into a comprehensive strategy for the promotion of entrepreneurship. General availability of programmes and courses for students at all levels of education, regardless of the subject content of their studies, should be guaranteed.
- (11) Where necessary, the importance of entrepreneurship teaching should be acknowledged by the **national curriculum**, so that specific programmes have a legal basis and a justification, and may be developed within an adequate framework. This will greatly contribute to increasing the motivation of schools and teachers to take up this type of initiatives.
- (12) Although good practice should be adopted on a voluntary basis, **policy commitment needs to be translated into concrete action**. This may involve changing the national curriculum where the system is centralised, and/or providing assistance and incentives where schools are free to establish their own programmes. A range of **support measures** to encourage schools to get involved in education for entrepreneurship may include, among others: making funds available; providing advice and teaching material; promoting contacts with local businesses, etc.
- (13) Good models for establishing **public-private partnerships** will have to be proposed and disseminated. Also, links between schools and entrepreneurs, although active in most countries, need to be greatly increased and their effectiveness enhanced.

Annex 1

A list of possible indicators on education for entrepreneurship:

1. *“Qualitative” indicators*

- Policy commitment at national level to promote entrepreneurship in education.
- Development of indicators on entrepreneurship in education.
- Collection of quantitative data at national level on entrepreneurship in education.
- Mechanisms in place to evaluate the effectiveness of measures.
- Private funding available for entrepreneurship in education.
- Inclusion of entrepreneurship in the national (or regional) curriculum at primary level.
- Inclusion of entrepreneurship in the national (or regional) curriculum at general secondary level.
- Inclusion of entrepreneurship in the national (or regional) curriculum for initial vocational training at the level of secondary school.
- Inclusion of entrepreneurship in the curriculum of teachers’ colleges (initial training).
- Further vocational training on entrepreneurship generally available for teachers during their career (in-service training).
- Measures taken at a national (or regional) level in order to promote the teaching of entrepreneurship in universities.

2. *“Quantitative” indicators*

Primary School:

- Number (in %) of primary schools including an entrepreneurship element in their courses.
Number (in %) of pupils receiving this type of teaching in primary schools.

Secondary School:

- Number (in %) of (comprehensive) schools of secondary level offering teaching in entrepreneurship.
Number (in %) of students receiving this type of teaching in (comprehensive) secondary schools.
- Number (in %) of vocational/technical schools of secondary level offering initial vocational training in entrepreneurship.

Number (in %) of students receiving this type of teaching in vocational/technical schools.

Number (in %) of students starting up their own company after completion of their studies in vocational/technical schools.

Teacher Training:

- Number (in %) of teachers receiving entrepreneurship training in colleges as part of the curriculum.
- Number (in %) of teachers receiving further vocational training in entrepreneurship.

Cooperation between educational institutions and businesses:

- Number of business associations involved in joint initiatives with schools and universities.
- Number (in %) of schools having steady links with businesses or business associations in order to promote entrepreneurship.
- Number (in %) of universities having steady links with businesses or business associations in order to promote entrepreneurship.

Tertiary Education:

- Number (in %) of higher education institutions with a Chair in entrepreneurship.
- Number (in %) of higher education institutions teaching entrepreneurship within undergraduate courses on other subjects.

Number (in %) of students involved every year at undergraduate level in entrepreneurship teaching

- Number (in %) of higher education institutions offering postgraduate courses in entrepreneurship

Number (in %) of students involved every year at postgraduate level in entrepreneurship teaching

- Number (in %) of students starting up their own company within three years after completion of their tertiary level studies.