



Entrepreneurship in Vocational Education and Training

Final report of the Expert Group



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‘ENTREPRENEURSHIP IN VOCATIONAL EDUCATION AND TRAINING’

FINAL REPORT OF THE EXPERT GROUP

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EXECUTIVE SUMMARY

Entrepreneurship refers to an individual's ability to turn ideas into action. Entrepreneurial programmes and modules offer students the tools to think creatively and to be an effective problem solver. Education for entrepreneurship can be particularly effective in initial vocational training, as students are close to entering working life and self-employment may be a valuable option for them.

VET takes a variety of forms in different countries, but also within a country. This report focuses on **initial vocational education** (in particular on upper secondary and post-secondary non-tertiary education).

Entrepreneurship is included in the **national curricula** for vocational education in a majority of European countries, at least to some extent. Moreover, some countries report that between 90% and 100% of vocational education students participate in entrepreneurship programmes at some point during their vocational education path. However programmes and activities included in those figures may differ greatly in intensity and effectiveness. In any case, there is in general a perception that **there is still a gap** to be filled.

Some major reasons for the gap identified are the following:

- entrepreneurship is not included in all parts of the VET system;
- student participation is limited;
- teaching methods are ineffective;
- the practical element of entrepreneurship is missing;
- teachers are not fully competent;
- entrepreneurship is not linked to specific training subjects or professions;
- business people are not sufficiently involved.

Therefore, despite some encouraging data, it appears that the uptake and the effectiveness of entrepreneurship education in European vocational schools are **still far from being fully satisfactory**.

A partial lack of **competence of teachers** is in many cases perceived as a problem, at least as regards their practical experience of entrepreneurship. Improvement is greatly needed in this area. Most countries report that some training courses on entrepreneurship are offered to teachers, but few offer a systematic approach.

On the other hand, there seem to be no major administrative obstacles to **cooperation between schools and enterprises** and this type of cooperation is generally well established, particularly in countries where a “dual system” is in place. It can be however difficult to ensure the participation of small and micro enterprises.

Regardless of the vocational training area, the most effective way to teach entrepreneurship is to have students participate in **practical projects and activities**, in which learning by doing is emphasised and real experience with entrepreneurship is gained. Problem-driven and experience-oriented education is essential to fostering entrepreneurial mindsets and abilities.

The most commonly used **teaching methods** are lectures, computer simulations and business games, student companies, project work and group work, company visits and work placements. Although a wide range of pedagogical tools are in place, there seems to be in

general a gap however between the teaching methods considered to be most effective and those that are currently used.

One explanation may be that not all teachers choose to, or are able to use active teaching methods. Another problem is linked to the lack of an interdisciplinary way of working on concrete projects. The current situation is that most teachers have not been trained in entrepreneurship. Consequently, they may be unaware of the right approach to entrepreneurship teaching.

Initial and further teacher training is of the highest importance, but entrepreneurship education is not yet included systematically in training programmes for educators. In many cases, on the job training is provided by external organisations. The most effective way to ensure that teacher competence in this field is adequate and up-to-date would be to make entrepreneurship a mandatory part of teacher education. It is also important to offer further education to those teachers who have already completed their initial education.

For public authorities, the first step for a coherent approach would be to **set up a steering or coordinating committee** for entrepreneurship education, at a national or regional level, with representatives from both the ministry of education and the ministry of economy and with the participation of other relevant departments and organisations (including business associations and NGOs).

As a following step, introducing entrepreneurship as **an explicit goal in the curriculum** will be a clear signal that this is important for every student. Moreover, it will make it easier for teachers to spend teaching hours on the subject.

A general trend can now be observed in the shift of national curricula from contents to competences. This process should continue: strengthening competence-based teaching and learning makes it easier for entrepreneurship to be included in school programmes.

Among other recommended measures for public authorities are the following:

- make career exploration mandatory, and include entrepreneurship in vocational guidance;
- provide counselling for schools and teachers in designing VET curricula, and disseminate successful experiences and practices between VET schools;
- support those non-profit organisations and NGOs whose mission is promoting and delivering entrepreneurship education, and which act as intermediaries between vocational schools and businesses.

At their level of responsibility, vocational schools should:

- **extend entrepreneurship to all fields of study** in vocational education: link practical training in specific fields of study with the objective of entrepreneurship, and provide support for students interested in starting up a business.
- make use of methods based on real experience (project work with real enterprises or with the local community, student mini-companies, etc.).
- ensure access to experts (from businesses, business associations, and NGOs) who can provide training and ongoing support.

Finally also other actors have an important role to play:

- **business associations** should promote partnerships between VET schools and enterprises, and motivate more business people to get involved in entrepreneurship education;
- the **European Commission** has a role in contributing to the exchange of good practices, experiences and methods, in raising awareness and in monitoring and benchmarking the process in EU Member States.

1. INTRODUCTION

1.1. Background

If it is to make a success of the Lisbon strategy for growth and employment, Europe needs to stimulate **entrepreneurial mindsets** among young people, encourage innovative business start-ups, and foster a culture that is friendlier to entrepreneurship and to the growth of small and medium-sized businesses. The important role of **education** in promoting more entrepreneurial attitudes and behaviours, starting even at primary school, is now widely recognised.

The **Spring European Council of March 2006** underlined the need for a positive entrepreneurial climate overall and for framework conditions that facilitate and encourage entrepreneurship, and invited Member States to introduce greater measures, including entrepreneurship education.

Following the European Conference in Oslo in October 2006, which presented a wealth of examples of good practice, the Commission published the '**Oslo Agenda for Entrepreneurship Education in Europe**'¹. The idea was to provide a menu from which all stakeholders could pick suitable items.

1.2. What is entrepreneurship education, and why teach entrepreneurship ?

Entrepreneurship refers to an individual's ability to turn ideas into action. It covers creativity, innovation and risk taking, and the ability to plan and manage projects in order to achieve objectives. This supports everyone in day-to-day life at home and in society, makes employees more aware of the context of their work and better able to seize opportunities, and provides a foundation for entrepreneurs setting up social or commercial activities².

Entrepreneurship education **should not be confused with general business or economic studies**, as its goal is to promote creativity, innovation and self-employment.

In this project, it was therefore agreed that existing activities and programmes qualify as education for entrepreneurship if they **include at least two of the following elements**:

- a) Developing those personal attributes and generally applicable (horizontal) skills that form the basis of an entrepreneurial mindset and behaviour;
- b) Raising students' awareness of self-employment and entrepreneurship as possible career options;
- c) Work on practical enterprise projects and activities, for instance students running mini-companies;
- d) Providing specific business skills and knowledge of how to start and successfully run a company.

¹ Available at: http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/education-training-entrepreneurship/index_en.htm.

² Commission Communication "Fostering entrepreneurial mindsets through education and learning". COM(2006) 33 final.

Entrepreneurial programmes and modules offer students the tools to think creatively, to be an effective problem solver, to analyse a business idea objectively, and to communicate, network, lead, and evaluate any given project. Students feel more confident about setting up their own businesses if they can test their ideas in an educational, supportive environment.

However, the benefits of entrepreneurship education are not limited to boosting start-ups, innovative ventures and new jobs. **Entrepreneurship is a competence for everyone**, helping young people to be more creative and self-confident in whatever they undertake.

The **Recommendation of the European Parliament and the Council** of 18 December 2006 on Key Competences for Lifelong Learning³ identifies the ‘sense of initiative and entrepreneurship’ as one of eight key competencies to be instilled at all stages of education and training.

Joint analysis by the Commission⁴ and national authorities shows that although numerous initiatives on entrepreneurship education are under way at all levels across the EU, most of them are neither integrated into the curriculum nor form part of a coherent framework, and that as a result **most students cannot yet take part in entrepreneurship courses and programmes**.

Education for entrepreneurship can be particularly effective in initial vocational training, as students are close to entering working life and self-employment may be a valuable option for them. However, a real focus on entrepreneurship is missing in most cases, since the main task is seen as being to produce skilled workers⁵.

1.3. Objectives and methodology

This European project was developed under the Competitiveness and Innovation Framework Programme – CIP (2007-2013)⁶, by using the “*Best procedure*”.

The “*Best Procedure*” was set up (under a mandate from the Lisbon Council in 2000) to promote the exchange of best practice and to create synergies between existing processes. Best Procedure projects analyse issues of interest for the Commission and national administrations to provide a better understanding of their nature and of the work being done on them, and to identify best practice.

The aim is to encourage policy change in the Member States and in the other participating countries, and one of the essential features of this methodology is that projects are carried out jointly by the Commission and by the national administrations concerned.

This project builds on the Commission Communication *Fostering entrepreneurial mindsets through education and learning*, adopted in February 2006, and on the *Oslo Agenda for Entrepreneurship Education in Europe*.

³ 2006/962/EC, OJ L 394/10.

⁴ ‘Best Procedure’ projects. Final Reports are available at: http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/education-training-entrepreneurship/index_en.htm.

⁵ Final Report of the Expert Group, Best Procedure Project: Education and Training for Entrepreneurship, November 2002.

⁶ Commission Decision C(2009) 32 of 14 January 2009, establishing the Entrepreneurship and Innovation work programme for 2009 pursuant to European Parliament and Council Decision No 1639/2006/EC.

An **Expert Group** was set up to gather and exchange information on the teaching of entrepreneurship in vocational education, and to propose appropriate measures. National governments were asked by the Commission to designate an expert. Representatives of certain European organisations and networks active in the field were also invited to participate as observers (*the complete list of experts appears at the beginning of this report*).

As part of its work the Expert Group reviewed existing programmes and examples of good practice.

More specifically, the main **objectives** of this work were the following:

- to review existing programmes and the most commonly used teaching methods;
- to gather information on existing good practice and provide examples;
- to identify the factors of success and the main obstacles;
- to identify and exchange best practice in promoting learning about entrepreneurship;
- to promote the exchange of experience;
- to highlight the role of public policies and identify relevant support measures;
- to draw conclusions and recommendations for policy action.

The **tasks** of the Group were: to bring together the necessary expertise; to provide information and data on existing programmes; to ensure cooperation with and the active involvement of the national administrations in the participating countries.

In addition to **23 EU Member States**, **Norway** also decided to participate in this activity.

1.4. Definition of Vocational Education and Training (VET) in this project

Vocational programmes differ from academic ones in their curriculum and in their aim of generally preparing students for specific types of occupations and, in some cases, for direct entry into the labour market. VET takes a variety of forms in different countries but also within a country. Initial VET normally leads to a certificate at upper secondary level. Taking into account differences between European countries, the definition of vocational education used in this project is broad, **including all vocational, technical and commercial schools and colleges, and all possible fields of specialised training**. The project therefore considers as ‘vocational’ all education and training that differs from general, comprehensive or academic education.

This project focuses on **initial vocational education** given in formal education and training systems. The levels of education considered correspond to **upper secondary vocational education** (ISCED level 3) and **post-secondary non-tertiary education** (ISCED level 4). However training for particular occupations can also be given at tertiary level in some countries, and the boundaries between post-secondary and tertiary are not always clearly defined. Therefore, depending on the specific situation in individual countries, ISCED level 5B is also taken into account.

The age of students participating to initial vocational education varies depending on the national system, ranging from around **14** (as in Belgium) to **29** (as in Sweden). Also,

boundaries between initial and further vocational education are not always clearly defined. The above-mentioned age range gives an example of the broad target group considered in this work. Vocational programmes and courses addressing adults and company staff have not been included.

Contributions from national experts highlighted the **great diversity of VET systems** in European countries, and the large variety of vocational schools and paths even within the same country. Initial VET can be school-based, or it can be given partly in school and partly in a company (as in the dual system). The age range can vary enormously, depending on different paths and entry-exit points. In many cases, external organisations (such as NGOs) are given responsibility for running entrepreneurship programmes based on practical experience, for instance through the use of simulations or mini-companies.

The following **key issues** have been generally identified as deserving special attention:

- school-enterprise cooperation, and opening up educational institutions to the outside world;
- teacher training;
- use of project work, simulations and student companies;
- the most effective methods;
- research on and assessment of the impact of entrepreneurship programmes.

2. OVERVIEW OF THE CURRENT SITUATION IN EUROPE

2.1. General overview

Entrepreneurship is **included in the national curricula** for vocational education in a majority of European countries, at least to some extent. In some of those countries (such as in Estonia, Spain and Poland) participation is compulsory, but in most cases entrepreneurship is an optional subject or is compulsory only in some parts of the vocational education system and not in others.

However, it is interesting to note that even in those countries where entrepreneurship is included in national curricula, there is in most cases a perception that the situation is not yet satisfactory, and that **there is still a gap** to be filled. This may be related to the extent of participation of schools and students, or to the effectiveness of methods applied.

Some major **reasons** for the gap identified are:

- teaching methods are ineffective;
- entrepreneurship is not included in all parts of the VET system;
- student participation is limited;
- teachers are not fully competent;
- business people are not involved;
- the practical element is missing;
- entrepreneurship is not linked to specific training subjects or professions.

At least nine countries (Austria, Cyprus, Estonia, Hungary, Luxembourg, Poland, Romania, Spain and the UK) also report that between 90% and 100% of vocational education **students** participate in entrepreneurship programmes at some point during their vocational education path. However these figures are only indicative, while programmes and activities included in the above data may differ greatly in intensity and effectiveness.

In any case, even in some of the above-mentioned countries there is a perceived gap in the entrepreneurship training offered. Therefore, despite some encouraging data, it appears that the uptake and the effectiveness of entrepreneurship education in European vocational schools are **still far from being fully satisfactory**.

Approximately half of the countries taking part report that specialist training for **self-employment** is fully integrated in all entrepreneurship courses. In other cases the objective of entrepreneurship education is broader, aiming rather to develop soft entrepreneurial skills and including training for self-employment only in some specific fields of study.

A partial lack of competence of **teachers** of entrepreneurship is in many cases perceived as a problem, at least as regards their practical experience of entrepreneurship if not their theoretical knowledge. Improvement is greatly needed in this area. Most countries report that some training courses on entrepreneurship are offered to teachers, but few offer a systematic approach.

There seem to be no major administrative obstacles to **cooperation between schools and enterprises**, and this type of cooperation is generally well established. Also, the vast majority of countries report that it is not too difficult for schools to find entrepreneurs and business

people who will come to the classroom. A positive outcome will depend normally on the proactive initiative of the school or the teacher. So this is not perceived as a major problem in most cases. It can be however difficult to ensure the participation of small and micro enterprises.

Non-profit organizations (NGOs) play an important role in organizing entrepreneurship education in VET schools, especially by offering programmes based on practical experience and working on projects. They have normally close links with the business world, and often receive some form of support from public authorities. In particular, European networks such as *Junior Achievement-Young Enterprise (JA-YE)*⁷ and *Europen-Pen*⁸ promote widely mini-company or practice firm programmes where students have to work on their real or virtual firm. These programmes are wide-spread and they are present in all European countries (for instance, JA-YE reports that 80% of VET schools in Denmark and 66% of VET schools in Norway offer students the possibility to create their mini-company).

⁷ www.ja-ye.org

⁸ www.europen.info

2.2. Brief overview of developments in some European countries

Austria

Entrepreneurship education is part of the curricula of schools and colleges teaching technical subjects and business administration, of part-time vocational schools for apprentices, of schools and colleges of tourism, and of colleges of agriculture and forestry. So all VET schools and colleges include some entrepreneurship component in the curriculum. In some college curricula, entrepreneurship and management is a specialist subject area.

Belgium

The current situation is relatively similar in Flanders and in Wallonia, with quite a large range of activities available. Both public and private actors offer various entrepreneurship activities or projects to complement the traditional education and training system. Entrepreneurship is not integrated into the curriculum, so student participation is only compulsory in some fields of study. For the majority of students, participation is optional. In practice, it is often the teacher or school director who decides whether students participate or not. Most activities or projects are open to all types of schools. Only a few focus on vocational schools.

To improve the take-up of ‘optional activities’ in schools, the Walloon government is promoting a coordinated programme of about 15 certified actions (from primary education to university) recommended to teachers. The programme, called ‘We all have an ace within us’⁹ is led by the ‘Economic Stimulation Agency’.

Bulgaria

For professions requiring a third-level vocational qualification, entrepreneurship is a compulsory subject for all students. For professions requiring first- or second-level vocational qualifications, with the exception of the vocational field ‘Business management and administration’, entrepreneurship is optional. Student mini-companies are included in the teaching of entrepreneurship as an optional subject in vocational economic and non-economic high schools in 10th and 11th grade. Sessions are either twice-weekly (72 hours) or four times a week (144 hours).

Cyprus

Entrepreneurship is included in the national curriculum for all schools of Technical and Vocational Education. No specialist entrepreneurship programmes or activities are offered, but all subjects include entrepreneurial components according to need. The National Strategy on Entrepreneurship in Education to 2010 aims to provide entrepreneurship training for all teachers in Technical and Vocational Education.

Czech Republic

The Czech Republic has two main programmes, both based on practical experience: Practice Firms and the Junior Achievement Student Company Programme (student mini-companies). Practice firms figure in the framework curriculum not as a compulsory subject but as a tool

⁹ www.tousdesas.be.

that can be used to facilitate work experience. However, entrepreneurship education depends largely on the willingness of schools to participate in these programmes.

Denmark

In Denmark, vocational training courses typically combine teaching (1/3) with work experience (2/3). Entrepreneurship is required to be taught in all VET programmes under national law and should therefore always be offered to students. However, student participation is always optional. The position is slightly different in upper secondary commercial and technical education, where entrepreneurship programmes are also optional for students but one of the compulsory subjects, 'communication and IT', teaches communication and innovative thinking in relation to entrepreneurship and starting a business or generating ideas for a business.

One key to the Danish VET system's capacity for 'ongoing renewal' is the Danish Innovation and Development Programme, which integrates innovation and development into the daily practice of the vocational colleges.

Estonia

Entrepreneurship programmes and activities are provided in all vocational education and training in Estonia. Since 2006 entrepreneurship programmes have been included in all national curricula for vocational education. The minimum is 40 academic hours (1 study week) in every programme. The average is twice as long — 80 academic hours (2 study weeks). A number of curricula offer entrepreneurship programmes of 120 academic hours (3 study weeks) or more. These include agriculture and horticulture, tourism, catering and other services, trade, applied art and handicrafts.

The challenges for entrepreneurship programmes in vocational education are mostly connected with teaching methods. There should be a wider range of techniques to supplement lectures as the most basic teaching tool.

France

Entrepreneurship education in France is linked to 'professional discovery' and career guidance. However, this type of education is not specified in national curricula. It is normally provided at the initiative of local authorities, individual schools, or specialist organisations, through voluntary activities. As a result, despite some recent progress, enterprise and entrepreneurship are not yet widely recognised in the French education system.

Germany

All the framework curricula for VET set by the *Kultusministerkonferenz* (Standing Conference of Education Ministers) specify that vocational schools must provide an insight into various forms of employment including entrepreneurship, to support a career and life plan involving self-employment. All vocational schools have to operate in this context, so entrepreneurial ways of thinking and acting form part of the established curriculum. However, entrepreneurship is not yet included in all recognised VET courses; school programmes still contain too little about business start-ups and entrepreneurship. Although initial steps have been taken, future modernisation of VET should systematically include entrepreneurship.

Hungary

Entrepreneurship is a basic competence in the Hungarian national curriculum, but the curricular content has a different weight in the 21 vocational trade groups of the Hungarian National Qualification Register. At present, the Hungarian competence-based modular vocational training system offers 422 qualifications. Several modules contain entrepreneurship programmes, so entrepreneurship appears in the majority of qualifications. Where vocational qualifications do not cover entrepreneurship, schools may teach it outside the compulsory curriculum, and a majority of them do so.

Italy

Entrepreneurship is not included in the established national curriculum for vocational education. However the legislation invites schools to promote a link with the labour market. The participation of the students is optional. There are many entrepreneurship programmes with a “local/regional” focus, supported by private sector and public institutions that reach a small number of students. There are however three main entrepreneurship programmes offered at a national level, including the possibility for students to work on practice firms and mini-companies.

Luxembourg

Entrepreneurship education is in some cases embedded in the school curriculum (e.g. for agriculture and hotels/restaurants, for which student mini-companies are also used); it can be offered in elective courses organised autonomously by schools; or it can be offered as an extra-curricular activity (i.e. outside the normal school hours). Mini-companies and training firms are used as a teaching tool, and the government, together with the private sector, has set up a non-profit organisation to promote entrepreneurship among schools. However, this type of education is not yet available to all students, and an inter-disciplinary approach is missing: teaching on entrepreneurship is still too often limited to economics courses.

Lithuania

National framework documents on vocational education state that entrepreneurship should be integrated into all programmes; however, there are no practical guidelines for implementing them. As a result, entrepreneurship is not mentioned in training programmes offered by vocational schools. So while some schools are promoting the most generic entrepreneurship skills, students who graduate from a vocational school normally do not possess any specific entrepreneurial competence.

Malta

In Malta no national curriculum exists for vocational education, and entrepreneurship is not formally included in school programmes as a subject on its own, with the exception of a compulsory module on entrepreneurship which is run in one particular IT course at Malta College of Arts, Science & Technology. On the other hand, in the majority of courses, there are other activities and initiatives aimed at fostering entrepreneurship. These include participation in mini-companies, work placements and extra-curricular activities like fund-raising for charity.

Norway

Entrepreneurship is mentioned in the national curriculum in general terms, and there is an opening for entrepreneurial programmes in vocational training in at least 7 out of 9 subjects. However, entrepreneurship education is not compulsory. It is up to the local school to decide on the methods it wants to use, and on whether and how to introduce entrepreneurship. Student participation in entrepreneurship programmes is optional, if the school management gives priority to these kinds of programmes in the local plan. If it is a priority for the school, then it is compulsory for students only if teachers give the programme priority.

The main provider is JA-YE Norway (Ungt Entreprenørskap). The Governmental Strategic Plan on entrepreneurship in education 2004–2008 sets out the goals and vision, and JA-YE is part of the strategy. Activities reach 300 out of approximately 450 vocational schools. The main activity is the Company Programme (student mini-companies), with an average of 4-5 hours each week for 30 weeks. About 1400 of these companies are running in vocational training each year, involving some 8 000 students. In 2009, the government launched an Action Plan following up on the strategic plan.

Poland

In Poland, curricula for all types of secondary and post-secondary non-tertiary schools include the subject 'Basic Entrepreneurship'. Student participation is compulsory. Additionally, all examination standards for vocational qualifications include aspects of entrepreneurship. However, the approach used to teach it is rather theoretical. As a result, vocational school students acquire professional skills — when they are trained in the workplace as apprentices — but not entrepreneurial competence. The Ministry of Education is currently preparing a reform of vocational education, which could make the teaching of entrepreneurship more practice-oriented.

Romania

In Romania, entrepreneurship is included in secondary school technical and vocational education and training as follows:

- in commercial, business and tourism schools the study of entrepreneurship through training firms is compulsory in upper secondary education;
- economics and applied economics are compulsory subjects in all fields of training;
- the competences: team work; problem solving; and ICT, together with an introduction to business, are compulsory for all training programmes in VET.

Programmes provided by commerce, business and tourism schools include compulsory training modules focused on business start-up and self-employment, using the training firm method. In 2007/2008, 890 training firms were registered with the Romanian Coordination Centre for Training Firms, involving an estimated 25 000 students from 146 vocational schools. In other fields such as agriculture, engineering, the food industry, and transport, specific entrepreneurship activities are organised as part of the 20% of the curriculum developed at local level, in partnership between schools and local enterprises. In post-secondary education, training programmes and specific entrepreneurship activities are provided as part of the compulsory curriculum only for commerce, business and tourism training.

Slovenia

In Slovenia, entrepreneurship is a compulsory module in the national curriculum both in upper secondary vocational education and in upper secondary technical education. The main objectives are to develop entrepreneurial attitudes and skills among young people, and also to give them more specific training on how to set up and run a business. In addition, practice firms are established in every business schools in the VET system. In the school year 2007/2008 there were 235 practice firms with 3470 students.

Spain

In Spain, entrepreneurship education is included in the national framework curriculum and is compulsory for all VET fields (technical, industrial, commercial, etc). Entrepreneurship programmes and activities as part of the established courses normally account for a minimum of 35 hours per year, distributed in three hours per week in the second year of studies. The 35 hours refer to 55% of curricular content (as the Ministry of Education provides general directives on educational policy), but Autonomous Communities can increase this to as much as 100%.

Slovakia

Entrepreneurship is included in the national curriculum either as a compulsory or as an optional subject. Training firms are used in all types of Secondary Vocational Schools (SVS) and in Secondary Vocational Apprentice Schools (SVAS), with a total of 170 schools participating in the different fields of VET.

Sweden

At present there is an optional national course called 'Projects and Enterprise,' which is designed to facilitate the mandatory project work component of upper secondary programmes. There are two other optional 'Small Enterprise' courses at upper secondary level. All these courses may or may not be available to students depending on the programme they are enrolled in, and on where they are studying. Municipalities run upper secondary education in Sweden, and there are regional differences in the way they implement national programmes. What is especially needed is more teachers and trainers who can help foster entrepreneurial attitudes and behaviours.

UK

There are no designated vocational schools in England, Scotland and Wales: all secondary schools are expected to provide opportunities for vocational training. In England it is a statutory requirement that all schools provide all students with work-related learning. A non-statutory framework sets out the suggested minimum experience for all young people. Enterprise education is a key element, aiming to encourage young people to be more enterprising. So enterprise education is not compulsory, but work-related learning is. The Scottish Government's strategy *Enterprise in Education — Determined to Succeed* commits local authorities to providing enterprise and entrepreneurial learning experiences for all pupils. These include opportunities for pupils aged 14+ to pursue work-based vocational learning linked to a relevant qualification and to receive appropriate career education. However, entrepreneurship is not yet explicit in most school programmes of vocational education. In Wales, entrepreneurship is not embedded in all vocational education, although

much is being done. All six of Northern Ireland's further education colleges offer a certificate in Business Enterprise, which is optional.

3. PROGRAMMES AND ACTIVITIES

3.1. What to teach, and how to teach?

3.1.1. Content and methods

A definition of education for entrepreneurship and a general description of the objectives are given in Section 1.2.

In teaching entrepreneurship it is particularly important to focus on the personality of young people. This type of education should foster creativity, a sense of initiative, risk taking and other generally applicable attributes and skills that are the foundation of entrepreneurship. Concerning operational abilities, it is necessary to distinguish between general entrepreneurial competences that everyone should acquire and those needed specifically for social or commercial entrepreneurship (e.g. for starting up a business).

In programmes that lead more naturally to setting up and managing a small business (e.g. hairdresser, pastry chef, automotive mechanic, electrician) it may be critical and appropriate to provide specific training on how to do this. It is, however, important to ensure that entrepreneurship is woven throughout all vocational education, and that entrepreneurial attitudes are nurtured through the entire VET system. This is even more crucial than providing entrepreneurship training in specific, but isolated, courses.

Common objectives appealing to and aiming at all students are, for instance¹⁰:

- exploiting opportunities;
- developing an idea further into a product or service;
- daring to deal with problems and to solve them;
- creating networks with other students and adults;
- accepting the implications of their own choices;
- seeing self-employment as a valuable choice of career;
- managing resources and money in a responsible way;
- understanding how organisations operate in society.

For students who will start an own activity at some point after their studies, more specific skills will be necessary, such as:

- being able to draft a business plan;
- knowing the administrative procedures for starting a company;
- understanding the principles of accounting, commercial law and tax law;
- being conscious of business ethics and social responsibility;
- having a clear understanding of market mechanisms;
- being acquainted with selling techniques.

Regardless of the vocational training area, the most effective way to achieve these objectives is to have students participate in practical projects and activities, in which learning by doing is emphasised and real experience with entrepreneurship is gained. Problem-driven and experience-oriented education is essential to fostering entrepreneurial mindsets and abilities. Especially good results can be achieved by working in small groups.

¹⁰ Study ‘Ondernemend leren en leren ondernemen’ by the King Baudouin Foundation.

In **Cyprus**, the Makarios III Technical School in Nicosia joined the municipality in a project to remodel and landscape the riverside. Students surveyed the area, designed the landscape and all details (benches, lighting etc.), and built models to demonstrate their ideas. At the end the project was presented successfully at the Town Hall.

A project at the Roskilde Business College in **Denmark** involved setting up and running a Christmas market for which local enterprises donated (or sold cheaply) Christmas merchandise. Students were responsible for the entire organisation, and had to be very innovative as their budget was limited. The market was very successful, making a profit which the students donated to a charity. The project included topics and teachers from marketing, accounting, Danish and mathematics, and taught the students a lot about self-employment and the need for an innovative approach.

The **most commonly used teaching methods** reported by experts are the following:

- Lectures
- Computer simulations and business games
- Student companies
- Project work and group work
- Company visits
- Work placements.

Less frequently mentioned are: coaching and mentoring; role play; discussions and brainstorming; and case studies.

Practical methods including setting up and managing **practice firms** and **student companies** (both virtual and real-life) are sufficiently widespread, particularly in commercial but also in technical VET schools. In some cases the activities are integrated into the compulsory curriculum while in others they are part of optional or extra-curricular activities provided by VET schools.

In **Germany**, the JUNIOR¹¹ project ('young entrepreneurs initiate, organise and achieve') under the auspices of the Federal Ministry of Economics and Technology is aimed at students from the ninth year to those in general and vocational colleges. Ten to fifteen students set up a student mini-company, and creatively develop and market a business idea for an academic year. The business ideas range from products to services such as event management, mobile phone training for older people and computer and Internet services. The innovative potential of the project lies in improving young people's understanding of the processes involved in running a company. In the past 13 years about 40 000 students have founded student companies and experienced business in real life.

In **Italy**, as part of the programme SIMULIMPRESA (a member of European — Pen International), about 400 schools are offering entrepreneurship education by means of practice firms. The practice firm is a simulated enterprise that mirrors the operation of a real-world business company acting as a sponsor. In an authentic office setting, students engage in simulated commercial transactions with other practice firms around the world in a closed network, where all the activities and routines of normal business administration and trade can be simulated. Each Practice Firm purchases, produces and sells a specific range of goods in a fictitious market. In Italy there are different types of practice firms running in three areas: administration, management and finance; tourism; and industry.

¹¹ www.juniorprojekt.de.

However there seems to be in general a **gap** however between the teaching methods considered to be most effective for fostering entrepreneurship in vocational education and those that are currently used.

One explanation may be that not all teachers choose to, or are able to use active teaching methods. Teachers should act more as a coach or facilitator for students than as a teacher who is just lecturing.

Another problem is linked to the lack of an interdisciplinary way of working on concrete projects. Opportunities are missed when teachers prefer to focus on their own courses rather than to consult with other teachers and propose a wider integration of different learning subjects.

3.1.2. Teachers and educators

As mentioned above (Section 2.1), providing teachers with adequate competences to teach entrepreneurship is seen as a major challenge. There seems to be a deficit of specific skills among teachers.

The current situation is that most teachers have not been trained in entrepreneurship. Consequently, they may be unaware of the right approach to entrepreneurship teaching. Teachers should have a better understanding of entrepreneurship education and the range of aims, methods and contents of it. There is a need for more teacher training, seminars and workshops, and to disseminate understanding of different ways and methods to support the entrepreneurial mindset.

Initial and further teacher training is of the highest importance, but entrepreneurship education is not yet included systematically in training programmes for educators, and it can be problematic to get teachers' colleges involved.

In many cases, on the job training on entrepreneurship is provided by external organisations delivering programmes to schools. For instance, an evaluation done by the Eastern Norway Research Institute shows that 80% of 'on the job' training is delivered by the NGO *JA-YE Norway*. About 2000 teachers took part in such training in 2007/08.

It is important that teachers are taken through the same learning process that they will use with their students, e.g. creating an idea and carrying it out, debriefing the learning, assessing the skills and knowledge developed, and evaluating the entire process.

Teacher training needs to develop the specific skills required to teach entrepreneurship, such as:

a) Project management skills

The heart of entrepreneurship education is students setting up and running a project. Teachers require the skills to support students throughout this process, which includes: planning and preparing the project (setting objectives and identifying what exactly is required and how it can be carried out, etc.); anticipating students' needs at each stage of the project; setting personal targets and goals throughout the project; and doing the final evaluation.

b) Pedagogical skills

The emphasis is on pedagogies that encourage learning: by doing; by exchange; by experiment; by risk taking and ‘positive’ mistake making; by creative problem solving; by feedback through social interaction; by dramatising and acting the part; by exploring role models; and by interacting with the outside/adult world.

This involves the teacher in suggesting and guiding rather than giving instruction, asking ‘open’ questions that do not necessarily lead to one correct answer, learning alongside the students, helping to resolve conflicts and difficulties that may arise and persuading students to face up to things they may initially resist or avoid.

c) Personal skills

Much of the success of the facilitation process depends upon a range of communication skills, including that of active listening, the ability to negotiate and work in teams with other colleagues and the ability to create a learning environment in which students can be open and frank, and feel confident and secure.

The most effective way to ensure that teacher competence in this field is adequate and up-to-date would be to make entrepreneurship a mandatory part of teacher education. It is also important to offer further education to those teachers who have already completed their initial education.

In **Cyprus**, initial training for teachers on how to teach entrepreneurship in vocational education is compulsory. Moreover, all teachers in vocational education must attend in-service seminars on this topic organised by the Cyprus Pedagogical Institute.

In **Austria**, a Summer University for entrepreneurship education (‘Workshop for Ideas’) has been created in Kitzbühel. Through hands-on exercises, teachers get to know the tools and methodology to teach entrepreneurship education both in economic and general subjects. This initiative is supported by a range of actors in the public and private sector, including the Federal Ministry for Education, Arts and Culture.

In **Romania**, the Ministry of Education Research and Innovation and the Austrian Federal Ministry for Education, Arts and Culture cooperated on training 500 teachers in using the ‘Practice Firm’ method with their students. Starting in 2008, and with the support of the European Social Fund, another 600 teachers from 280 VET schools are being trained in using innovative learning methods and developing teaching and learning materials for entrepreneurship education.

3.1.3. School-enterprise cooperation

It may be difficult for a professional teacher to give students a taste for entrepreneurship. Opening schools to the outside world makes it possible to address this problem, by inviting external experts — such as business people and entrepreneurs — to take part in teaching. In this sense, it is advisable that young entrepreneurs coming to the classroom are those who have in the past attended the same school, so that students can easily identify with them: ‘if he/she can do it, I can do it as well’.

Cooperation between vocational schools and enterprises seems to be generally well established, although good results very often depend on the individual initiative of schools and teachers.

In the **UK**, virtually every area of **England** has an Education-Business Partnership Organisation to help schools work with employers. It is estimated that the EBPOs work with over 300 000 employers each year. There are approximately 550 000 work experience placements for 14-16 year olds in England annually as part of work-related learning.

One of the main difficulties reported by experts is involving small and micro-enterprises in school activities. Small companies do not have sufficient time to dedicate to work placements of students in the company, or do not see any benefit in cooperating with schools.

Therefore, despite the interest and goodwill of many teachers and entrepreneurs in engaging in cooperation activities, there are still a number of obstacles to be overcome, such as:

- the large number of different tasks to be performed by staff of very small companies, leaving little time for involvement with schools;
- the lack of mutual knowledge and understanding of each other's priorities and what each party is involved in on a day-to-day basis;
- a possible lack of trust as a result of the above;
- the differences in working times / hours of working;
- the absence of a main point of contact in the school.

In some cases another obstacle is that teachers are not allowed to work in other domains outside school. Teachers should be allowed flexible periods of training in companies.

Cooperation with enterprises is normally well established in those countries where a 'dual system' of training in school and enterprise is in place. In the dual system (for instance in Austria, Germany and Denmark), enterprises are directly involved in training students through work placements, which in many cases may have an innovative, entrepreneurial or 'intrapreneurial' dimension.

In **Austria**, the framework curricula for VET schools and colleges and part-time vocational schools are closely linked to the occupational profile and to the description of relevant skills. Experts from different bodies (the ministry, schools, and social partners) jointly discuss and design the curriculum. The draft curriculum is then sent to all interested parties to gather their opinions. At the end of this process the Minister for Education, Arts and Culture issues the framework curriculum.

Apprenticeship training could be seen as a good model for cooperation on different levels: company trainers meet teachers to discuss the specific situation of apprentices, and companies negotiate with schools to ensure coherence between the company training and the school curriculum.

In addition to regular placement periods in a company, formalised partnerships between the VET school and the company seem to be an efficient way of cooperating on developing an entrepreneurial mindset among students, to the benefit of all parties. Partnerships may contain many different elements, all aimed at facilitating and increasing cooperation which may contribute — not just indirectly but directly — to developing the student's entrepreneurial competence. Such partnerships may, for instance, involve the following:

- The enterprise provides guest teachers at the VET school — in cooperation with the teacher team.
- The enterprise delivers real-life, practice-related problems for use in student assignments and projects.
- The enterprise ensures that the student gets an insight into the sector and into its own operations by visiting the company, shadowing a manager, taking part in exhibitions, etc.

A concrete example of a close partnership can be seen at **Køge Business College**¹² (**Denmark**). In this college students conclude their education by carrying out a practical project in enterprise on which the enterprise and the school cooperate. Taking a real problem as the point of departure, the student can demonstrate his/her entrepreneurial skills and creative thinking by coming up with a solution or a product that meets the enterprise's needs. Before starting, the student drafts a project description which must be approved jointly by the enterprise and the school. This case-based final exam can be taken individually or in groups.

In the city of **Cagliari (Italy)**, *La Città dell'Impresa* (City of Enterprise) is a meeting place aiming to stimulate creativity and to spread an entrepreneurial culture. It has three sections: the Exhibition, the Factory and the Academy. The Exhibition is an interactive multimedia path where young people can learn about emerging local markets, test their entrepreneurial skills and receive practical advice. After the virtual part there is the real area, the Factory, where experts in the field give consultancy and practical advice, help examine the feasibility of ideas put forward by potential entrepreneurs and suggest the best ways of realising them.

3.2. Evaluation of quality, results and impact

There are several ways of evaluating the **quality** and the **results** of entrepreneurship programmes and activities in vocational education and training, for instance:

- by collecting feedback from pupils who participated in the programme and from other stakeholders;
- by taking impact measurements, e.g. measuring entrepreneurial competences and entrepreneurial intentions before and after participation in the programme.

The **long-term impact** can also be assessed, for instance by measuring how many students who participated in entrepreneurship programmes or activities have become entrepreneurs later. However, starting up a company is only one in a range of possible outcomes of entrepreneurship education; therefore long-term impact assessment could also consider other indicators such as entrepreneurial activities within a company (*'intrapreneurship'*) or the quality and level of employment.

In fact, what is needed is coordination of research linking **short-term** evaluations of what individuals experience in schools, **medium-term** measures of how attitudes and intentions change and **long-term** assessments of the quality and level of employment and of the net result on business start-up and survival rates.

¹² www.kogebusinesscollege.com.

Evaluation of the quality of programmes and activities should include internal procedures and self-assessment, and external and independent auditing, and could measure:

- General entrepreneurial abilities: creativity, capability with regard to putting forward innovative ideas, curiosity, ability to work in a team, self-confidence, leadership, proactiveness of approach, willingness to take risks, problem-solving skills, responsibility, etc.
- Specific entrepreneurial competences: the knowledge and skills to understand what must be done in order to set up and run a new business; the capacity to draft a good business plan; the ability to identify opportunities; an insight into production methods, knowledge of finance, etc.
- Attitudes: how many students consider self-employment as a career option?

Such abilities, competences and attitudes should preferably be measured **both before and after students' participation** in the programme. This can be done by means of:

- self-assessment;
- interviews;
- group evaluation and focus groups;
- evaluation questionnaires;
- tests and simulation games, etc.

The self-assessment should be carried out by three groups: students, teachers and school management, in order to determine the three groups' satisfaction with the experience. The perception of industry and employers — especially those involved in the programme — should also be taken into account.

Programmes and activities should be evaluated regularly as part of the programme, rather than as a one-off exercise. The outcome of the evaluation (lessons learned) should be embedded in the next round of activities.

One way of assessing the long-term impact would be to find out how many students who participated in entrepreneurship programmes or activities have become entrepreneurs 5 or 10 years later.

This would entail either sending questionnaires to former students of entrepreneurship programmes to assess whether they have started their own company (or whether they are employed but use the entrepreneurial skills acquired), or getting feedback on a regular basis from alumni-entrepreneurs through close cooperation with them. The number of alumni-entrepreneurs could be a good indicator, if a database allows such information to be obtained objectively. However, in most cases this information is currently collected at the initiative of schools through personal contact.

There are still other challenges to be overcome in assessing the impact of entrepreneurship programmes and activities at school in terms of new business creation. These relate to:

- the wide variety of objectives and methods of delivery of entrepreneurship education;
- the difficulty in isolating the effects of entrepreneurship education programmes from other educational attainments and from all other factors (economic, administrative, etc.) that influence entrepreneurship and business creation at national or regional level;

- the long chain from intervention to intended outcomes, when trying to link student participation in entrepreneurship education in secondary school to being more likely to run a business at age 25 or 30.

4. FACTORS OF SUCCESS, RISKS AND OBSTACLES

4.1. Factors of success, and good practice in delivering entrepreneurship education

The members of the Expert Group were asked to identify a set of **key features** for effectiveness and success in teaching entrepreneurship. These are proposed as general indicators of **good practice**.

Good Practice indicators for entrepreneurship education in vocational schools¹³

- 1) The programme or activity has well-defined objectives and appropriate measures of success. It is regularly evaluated, and receives positive feedback from students. Evaluation results are continuously fed into the development process.
- 2) There is a good balance between theory and practice: the programme or activity is action-oriented, based on experience and project work. It aims to improve the students' abilities to work in a team, develop and use networks, solve problems, and spot opportunities. Students are actively involved in the learning process, and responsible for their own education.
- 3) The programme or activity is adapted to the students' learning environment and to their specific fields of study.
- 4) The institution has external links with enterprises, experienced business people and young entrepreneurs, and with the local community. Entrepreneurs are involved in the learning process.
- 5) Students are exposed to real-life work situations and encouraged to take part in extra-curricular activities. External events, activities and contests are organised.
- 6) Teachers have an appropriate qualification in entrepreneurship (through experience in business and/or participation in training). They use up-to-date study materials and up-to-date knowledge.
- 7) The programme or activity stimulates the students and teachers to look beyond the borders of their school environment (e.g. by exchanging experience or ideas with other schools, with students from other countries or with other technical backgrounds).
- 8) The programme or activity is part of a wider scheme: students are followed after participation in the programme, and are referred to the right support mechanisms if they want to start up a business.

¹³ Similar indicators were defined in previous exercises involving national experts at European level, e.g. the Expert Report *Mini-companies in Secondary Education* (Directorate-General for Enterprise and Industry, September 2005), available at:
http://ec.europa.eu/enterprise/policies/sme/promoting-entrepreneurship/education-training-entrepreneurship/index_en.htm.

This list does not include **external factors**, i.e. the overall environment in which programmes and activities take place, such as support from public authorities. These factors are covered in other parts of this Report, particularly in Section 6.

4.2. Risks and obstacles

The members of the Expert Group were asked to identify the main perceived **risks** and **obstacles** to promoting and delivering entrepreneurship programmes in vocational education.

In the following list, the risks and obstacles are divided into three broad categories, showing the levels at which action needs to be taken.

Policy framework:

- There is no dialogue and cooperation between different departments in the public administration that should be responsible for entrepreneurship education policies and actions.
- There is no national strategy or plan to implement entrepreneurship education that includes all stakeholders (public and private), so students cannot choose such training as of right.
- There is no legitimate and coherent institutional system. Initiatives are based on the efforts of individuals, with no guarantee of continuity when there is a change of government.
- Entrepreneurship is not part of the vocational curriculum. Ministries of Education do not endorse such education (even though Ministries of Economy/Industry and others have made entrepreneurship a priority). There is no recognition of entrepreneurship education, and no cooperation with relevant partners (such as business associations and NGOs).
- The purpose of VET studies is sometimes seen as being only to provide workers with technical skills, without developing generally applicable, interpersonal and entrepreneurial skills.
- There is not enough cooperation between stakeholders at regional level.
- There are legislative or bureaucratic barriers to making such programmes widely available (for instance, related to the taxation of student mini-companies).

Support for schools:

- Coordination is lacking, because there is no single support structure and financial resources are fragmented.
- Funds and resources either are lacking or lack continuity.
- Information is poorly disseminated to schools.
- Institutional cooperation between the formal education system and the labour market is weak.

Obstacles and risks to schools and educators:

- Support from the school management and local community is lacking.
- Teachers and the school management are reluctant to introduce entrepreneurship programmes.
- Entrepreneurship programmes are confused with management programmes.
- The teacher does not succeed in making entrepreneurship education relevant to the students.
- Teachers lack competence and knowledge. Some teachers' knowledge is only theoretical. As a result, the programme is too theoretical (academic). Theoretical knowledge is stressed rather than developing entrepreneurial skills.
- Teachers are not trained in entrepreneurship education.
- Career guidance and counselling is weak.
- The learning environment is not entrepreneurial.
- It is difficult to measure the outcome of entrepreneurship education, and experience in measuring and assessing results is lacking.
- The school environment is isolated and lacks links to local entrepreneurs.
- Entrepreneurship is a separate field or course, and is not otherwise linked to or interwoven in vocational education and training.
- Entrepreneurship is seen merely as a course that ends with a grade rather than a permanent way of thinking or attitude.
- Time (and staff) commitment is lacking and there is increasing competition with other activities.
- Business people are not available as volunteers: it requires a lot of resources to recruit, train and support a large number of volunteers; furthermore, in today's environment, corporate volunteering may become less prevalent.

5. SOME EXAMPLES OF GOOD PRACTICE

This section gives examples of possible approaches and methods that can be used in teaching and disseminating entrepreneurship within vocational education, as proposed by the members of the Expert Group.

These examples reveal a diversity of objectives, targets, methods and solutions. They are proposed here not as the best in Europe (a full list of good practice examples would be much longer), but as a meaningful selection of diverse cases.

1) The Entrepreneur's Skills Certificate (Austria)

The Entrepreneur's Skills Certificate is an additional qualification that strengthens economic know-how and business skills. Besides imparting sound economic knowledge, the ESC also acts on personal characteristics. It aims to promote a positive attitude towards the economy and to encourage entrepreneurial attitudes among young skilled people. It also aims to develop start-up skills in a modern and practice-oriented way. The objective is to see starting up a business as an attractive option in one's professional career. As it leads to a certificate, this programme provides an additional asset for skilled workers.

Originally aimed at students in upper secondary academic schools, the ESC is now being spread to vocational schools where trainees complete their theoretical training in parallel with apprenticeship training in companies. In 2008, the number of certificates awarded was 12 055.

The Entrepreneur's Skills Certificate was set up by the Austrian Federal Economic Chambers, which also developed the syllabus and content. The content is revised and evaluated on a regular basis. The Austrian Federal Economic Chambers offer teacher training in cooperation with regional teacher training colleges. This extra qualification guarantees constant quality and sustainability.

2) The Knowledge Centre 'Competento' (Belgium)

This broad initiative, developed in Flanders, include two main action lines:

A *Virtual Knowledge Centre*¹⁴ with a large database on materials (documents on policy and research reports; models, methods and course materials; and screening instruments for entrepreneurial competences), initiatives, information, events and contests.

The Virtual Knowledge Centre is a unique platform for spreading all kinds of material on entrepreneurship education to teachers. It forms an exchange platform between pedagogical supervisors, teachers and educators, coaches in specific courses and business representatives, who are indeed ideal intermediaries.

The '*Entrepreneurial Class*' Week aims to highlight actions on entrepreneurship in schools and training centres over one week. There is a leaflet to inspire participants. The theme for 2009 is Creativity and Innovation.

All creative and innovative ideas and initiatives get an equal chance to be known by the target public. All education and training partners are contacted so there is ample support for the

¹⁴ www.competento.be.

transfer of new information and exchange of knowledge and experiences regarding entrepreneurial competences and entrepreneurship.

Before the *Competento* website was set up, the wide range of methods and initiatives was fragmented and confusing for the user. The *Competento* database provides an overview of options for promoting the entrepreneurial spirit and competences in Flanders, and many international initiatives. Good practices are disseminated via the *Competento* website. Anyone looking for examples finds them all in one place. Teachers, trainers and others in education can subscribe to the newsletter to be informed of new activities.

3) Joint project by the Ministry of Economy and Energy and Junior Achievement (Bulgaria)

Developing Centres for Entrepreneurship in vocational schools — and promoting the entrepreneurial spirit and skills among students from these schools — is a joint project by the Ministry of Economy and Energy and Junior Achievement in Bulgaria. Four such centres have been set up in four different sectors of industry (architecture and construction; food and food technologies; textile and clothing; and forestry and wood processing). As part of the project, students form a mini-company (three per school) and operate and run it for one year; the course is offered as an elective to all students from 11th grade (approval by the Ministry of Education and Science has been received). A Business Club with representatives from the local business community and experts from the relevant industry is set up to support delivery and provide practical experience. Students, schools, and the local community cooperate to organise and promote events such as trade fairs, competitions, and joint projects.

This model has been received extremely well, as a sustainable public-private partnership that actively involves the business community and is innovative in several ways. Firstly, the students' involvement raises awareness and support for the promotion of entrepreneurship in the local communities. Secondly, it links the real workplace with education and makes education much more market-oriented, i.e. developing the new skills needed for the globalised economy. Thirdly, the teacher acts as a consultant (mentor), and non-traditional methods of learning are adopted.

4) ESF Project 'Developing Entrepreneurship Studies' (Estonia)

This project was run — with financial support from the European Social Fund (ESF) — by the Foundation '*Innove*' and partners (six vocational schools and the Estonian Chamber of Commerce and Industry) between September 2005 and August 2008.

It resulted in the development of three new entrepreneurship modules that can be adapted to different VET curricula:

- a 40-hour *Basic module*, targeting students in vocational schools following basic education;
- a 40-hour *Entrepreneurship module* for students in post-secondary vocational education;
- an 80-hour *Optional module: Evaluation of Business Performance and Managing Entrepreneurial Challenges* for students in vocational secondary education.

The *Basic module* is designed to develop students' understanding of the market economy and of the world of work, to introduce career research, the logic of how businesses operate and the basics of founding and running a business.

The *Entrepreneurship module* focuses on the business environment in Estonia, business start-ups and enterprise activity. Enterprise activity provides students with the opportunity to put the knowledge and skills they have learned into practice — students have to plan, set up and run their own enterprise activity and present an enterprise report based on this activity.

The *optional module* focuses on Evaluation of Business Performance and Managing Entrepreneurial Challenges. This also includes enterprise activities. Suggested teaching methods are brainstorming, teamwork, case-method, project-based learning, and individual tasks.

Relevant study materials, teacher's manuals and user guides for project-based learning in the new modules were developed and delivered to pilot schools during the project period. The use of simulations and videos were also important components of the project. These included the simulation 'Pizzeria'¹⁵ (management of a pizza restaurant) and a video of interviews with entrepreneurs.

5) Professional degree in hairdressing (France)

In France, programmes offered by the public education system include components on the entrepreneurial mindset and company start-ups especially in those specific fields where the holders of a diploma can be expected to become company heads or managers.

The professional degree in 'Hairdressing' seeks to develop the set of competences needed for creating, buying or exploiting a hairdressing shop. These include how to run an enterprise, administration and accounting, and staff management. The teaching aims to develop analytical, operational and behavioural skills.

Skills to be acquired relate to:

- analysing the economic environment and the hairdressing market;
- choosing a form of trade and a legal form;
- acquiring and funding a business;
- drafting a business plan;
- deciding on investment policies;
- selecting suppliers;
- mastering business communication;
- analysing costs and prices;
- accounting;
- managing the work;
- recruiting staff; and
- motivating staff.

¹⁵ www.pizzeria.ee.

6) School-based Practice Firms (Slovenia)

Practice firms provide students with an insight into the complex structure and business process of real companies. There are two main learning outcomes: students obtain an insight into how a company works, and they develop entrepreneurial skills and attitudes.

Practice firms are set up in business schools as a part of the curriculum. As real companies, practice firms are organised in various departments such as personnel, administration, marketing, accounting, logistics etc. Students work in different departments. The training is practical, interdisciplinary and geared to problem-solving. Thus students acquire the ability to work in teams and to take decisions, and develop responsibility for their work. In addition, they acquire other entrepreneurship-related skills such as: the ability to negotiate, risk acceptance, and the ability to plan and organise their work. Through *Europen-Pen* (the European practice firms' network) students can set up international partnerships with practice firms in other countries.

Practice firms have been set up in every business school in the VET system in Slovenia. In 2007/2008 there were 235 practice firms with 3 470 students.

7) Student mini-companies and the tax administration (Norway)

JA-YE Norway had 12 500 students in 2 500 mini-companies in upper secondary schools in 2008, which means that JA-YE reaches approximately 20% of all students leaving upper secondary education. About 60-70% of the students participating are from vocational training. A teacher of the year and a school authority of the year are also nominated.

There is very good cooperation between the Norwegian tax administration and JA-YE Norway on the Student Company Programme. At a certain point the students and the teachers need to know about taxation, VAT, etc. This information is given by the local tax administration when the school asks for it. In addition taxation staff give information about the black economy and the risks of working in the black economy. There is also an award for the best financial statement drafted by a mini-company. The award is presented by the Tax administration. Finally, in handbooks for student companies about accounting, and in the national rules, there is a chapter on mini-companies. This cooperation with the tax authorities has solved many potential problems since it led to the setting up of a framework for mini-companies to work within.

Findings from a number of studies have shown that entrepreneurship education like the mini-company method contributes to a more entrepreneurial culture, and students who have had entrepreneurship education are at least twice as likely to become entrepreneurs in later life. In addition the students score higher on questions about self-confidence, cooperation skills and motivation in school.

8) 'Make Your Mark' clubs (UK)

Government funding is provided for a national campaign to raise awareness of enterprise and entrepreneurship. The campaign coordinates activities to support schools and colleges around enterprise, including support for extra-curricula activities through the Make Your Mark clubs.

The Make Your Mark clubs are a national network of student-led groups, meeting outside lesson time at school or college and focusing on running live enterprise projects. The Clubs

provide students with a network of enterprising peers aged 14-19. The aim is to help schools and colleges enable young people to develop entrepreneurial thinking, take risks, build personal confidence, apply their knowledge from across the curriculum, and to really make ideas happen. Following an intense recruitment period in summer 2008 the network currently has 484 members (368 schools and 116 further education colleges).

The main benefits to participants are the following:

- access to free, simple materials e.g. a club start-up guide;
- a secure members-only website where students and teachers can exchange ideas;
- competitions with cash prizes to help students develop their ideas (held each term);
- a regular newsletter;
- an annual certificate for every club member;
- an invitation to a national Club networking event;
- opportunities to gain support from campaign Ambassadors.

The Make Your Mark Club is an opportunity to build on young people's interests in a number of different curriculum areas including Mathematics, English, Citizenship, Design and Technology, and Business Studies. It is also a great way to nurture entrepreneurial talent and to encourage teenagers to make their ideas happen.

The Make Your Mark clubs have proved effective in introducing schools to the broader aspects of enterprise — particularly around access to inspirational (young) business people/ambassadors, networking with other like-minded individuals and providing a mechanism for young people to develop ideas outside of the classroom (in their own time).

6. HOW TO MOVE FORWARD: A STRATEGY FOR ENTREPRENEURSHIP EDUCATION

6.1. A coherent framework for entrepreneurship education

As the first step in a coherent approach it is essential to set up a steering or coordinating committee for entrepreneurship education, at a national or regional level, with representatives from both the ministry of education and the ministry of economy and with the participation of other relevant departments and organisations (including business associations and NGOs).

In **Norway**, three ministries participate in a steering group and cooperate on the development of the national action plan on entrepreneurship in education. The ministry of Education is the lead partner.

In **Belgium**, the Flemish Entrepreneurial Educational Action plan is managed by a steering committee including representatives of the Minister and Department of Education, the Minister and Department of Economy and SYNTRA Flanders (which reports to the Minister of Labour). The Walloon Region and the German-speaking Community have similar initiatives in place.

As an outcome of close cooperation between all actors concerned, developing entrepreneurial attitudes should become one of the basic goals of education, this goal being defined and acknowledged in educational policy as a whole as well as specifically in the curriculum of vocational secondary schools and in teacher training development plans.

Solutions lie in setting a clear national strategy for entrepreneurial learning, with agreed outcomes and success measures, and ensuring that everyone responsible for delivering the strategy has a clear understanding of their role and what they need to achieve. Networks and delivery bodies are essential to help deliver the strategy, but individual institutions must continue to have the autonomy and flexibility to deliver entrepreneurial learning in the most appropriate way.

Introducing entrepreneurship as an explicit goal in the curriculum will be a clear signal that entrepreneurship is important for every student. Moreover, it will make it easier for teachers to spend teaching hours on the subject. Where entrepreneurship is not explicitly included in the curriculum, it often happens that teachers who want to participate with their students in entrepreneurial activities have to prepare this outside school hours. This type of learning must be anchored in the curriculum and made available to all students, not depend on the individual will and initiative of single teachers and schools. Some experts emphasised that only if entrepreneurship is introduced as a compulsory item in the curriculum will it become possible to reach all students.

In **Denmark** the teaching of entrepreneurship was introduced into the vocational education system in 2007. It is emphasised that both practical and theoretical training should aim at providing students with general and specific qualifications directed towards entrepreneurship, innovation and starting a company. Hence, entrepreneurship is a requirement in all VET programmes and should always be offered to students. This development represented a great change and an important boost to teaching entrepreneurship.

In **Poland**, curricula for all types of secondary and post-secondary non-tertiary schools include the subject ‘Basic Entrepreneurship’. Participation in lessons on this subject is compulsory. Additionally, all vocational standards include aspects of entrepreneurship.

In **Spain** entrepreneurship education is included in the national framework curriculum and is compulsory for all VET fields (technical, industrial, commercial, etc.), with a specific module included in the programme for each diploma.

A general trend can now be observed in the shift of national curricula from content to competences. This process should continue: strengthening competence-based teaching and learning makes it easier for entrepreneurship to be included in school programmes. Including entrepreneurship in national VET standards favours this process, as standards are to be considered as concrete results of learning. At all events, the curriculum should not be too rigid, so as to leave room for teachers to take interdisciplinary initiatives and to organise practical activities.

6.2. Support for schools and teachers

Schools need to be given more support for introducing entrepreneurship into VET programmes, for example with: organising and developing programmes and teaching tools; raising awareness among school management; providing counselling for schools and teachers; ensuring initial and continuous training of teachers; and facilitating links and cooperation between schools and the local community.

To improve the take-up of optional activities in schools, in **Belgium** the Walloon government promoted a coordinated programme of about 15 certified actions (from primary education to university), recommended to and promoted among teachers by a specific team of ‘Entrepreneurial Spirit Awareness-Raisers’. The team is made up of non-economic teachers (seconded from their schools for two years) tasked with convincing schools to introduce entrepreneurial activities in their programme or to build their own activity with a small public grant. The initiative is run by the ‘Economic Stimulation Agency’¹⁶.

As concerns teaching methods, it seems that a project-based approach is by far the most efficient. Projects provide an opportunity to cover a number of different subjects in an entrepreneurial context. An entrepreneurial approach should therefore permeate the whole of education. More and more schools are becoming aware of the importance of embedding entrepreneurship education across the curriculum through work on projects. The initiating and coordinating force behind these projects could be a teacher responsible for entrepreneurship education in the school, with the support of the school management. Project-based work should become a recurring event in schools.

¹⁶ This project — under the name ‘A team of entrepreneurship awareness-raising workers’ — ran for the 2009 European Enterprise Awards, in the category of Entrepreneurship Promotion, More information at:

http://ec.europa.eu/enterprise/policies/sme/best-practices/european-enterprise-awards/index_en.htm.

At the **Malta** College of Arts, Science and Technology, mini-companies are run by students in Hairdressing and Beauty Therapy. With the help of their teachers, students offer services to the community three times a week. Under the guidance and supervision of their tutors, they take appointments, serve clients, handle cash and deal with customer queries. It has proved a successful initiative and is a flourishing business.

Teachers need to have the right competences and experience for teaching entrepreneurship. The best way of ensuring this on a long-term basis is to include teaching in entrepreneurship in compulsory initial teacher training programmes. Creative thinking and innovation should be the main pillar of such training: the learning environment should appeal to the student's desire to experiment. VET teachers should have knowledge, understanding and skills in relation to entrepreneurship.

Teachers should also be able to participate in ongoing continuing professional development in the field, thus ensuring that the competences acquired do not become obsolete. This professional development could take place at the vocational school as a part of in-service learning or externally with training providers with expertise in teaching entrepreneurship. Real entrepreneurs and business people should also contribute to teachers' training.

Qualification requirements for VET teachers should correspond to real needs, and teachers in entrepreneurship should receive enough practical training. At present, the requirements focus too much on pedagogic and academic preparation. Ideally, teachers should experience entrepreneurship themselves. Teachers of entrepreneurship should be given a chance to do internships in enterprises.

In **France**, a new approach to training teachers was introduced in 2007. Every teacher is now required to know the world of enterprise, and needs to prove this knowledge before being recruited. During the preparation for the teachers' competition, every future teacher must do an internship of at least three weeks in a company. In this preparation phase, every future teacher of a technical or professional discipline needs to gain three months' experience in the profession that he/she will teach. After being appointed, every teacher at a '*lycée professionnel*', regardless of his/her discipline, will have another internship of three weeks in a company during the first year of specialisation. This internship focuses on links between school and enterprise, and ends with the design of pedagogical tools.

It is of course important to have a range of good-quality teaching materials and tools available. Teachers could be informed of the resources that exist by several methods: information markets, websites, and learning networks. A database of teachers' descriptions of their experiences with entrepreneurship education programmes/activities and ideas for creative projects and initiatives could also be a good source of support. In addition to information, teachers may also need guidelines on which programme or activity is the best for them and for their class. This type of support could be delivered by specialist counsellors. Finally, offering awards to teachers who are particularly committed to entrepreneurship education would also contribute to keeping their motivation high.

In **Belgium**, SYNTRA Flanders — the Flemish agency for entrepreneurial training — and other partners hold an '*Infomarket*' every two years where teachers and trainers can discover methods and materials to foster entrepreneurial competences in their classroom. Teachers can participate in workshops designed for all levels of education.

In **Sweden**, national VET advisory committees participate in the development of vocational education and training programmes. Every upper secondary school with VET programmes has an advisory committee that participates in the planning, delivery and evaluation of education at both local and regional levels.

In **France**, the national competition ‘young initiative’ organised by the Ministry of Education rewards the best enterprise projects every year. This award aims to encourage students’ creativity and enterprising spirit by selecting the best projects on setting up a business (virtual or real) developed in vocational, technical and general secondary schools, or apprenticeship schools, in any field of study.

6.3. Cooperation with enterprises and stakeholders

The business world and the local community more generally need to be actively involved in drafting standards and programmes, and in providing education and practical training (integrating work and learning).

In **Estonia**, Enterprise Estonia and the Estonian Chamber of Commerce and Industry started an Entrepreneurship Round Table in 2008. All the institutions (both public and private) which had so far worked independently came together for the first time. As a result of the round table, a strategy for promoting entrepreneurship education is to be drafted, based on the 2007 cooperation agreement between the Ministry of Economic Affairs and Communications and the Ministry of Education and Research.

School managers should take the initiative to work with the private sector and other agencies in the community, and support teachers in developing partnership agreements. The best examples are of schools having close links with local business not just for the more traditional ‘work experience’ but increasingly to help teachers deliver and stimulate entrepreneurial learning. An ‘enterprise coordinator’ in the school may play a key role here.

Dedicated non-profit organisations or NGOs with experience in delivering entrepreneurship programmes and activities to schools also play an important role, and one which should be better recognised. These organisations contribute to programme development, teacher training, effective involvement of the private sector, and the organisation of extra-curricular activities such as competitions and other events. In some cases it may be more cost-effective for education ministries to certify and endorse a partner than to invest in setting up programmes themselves. Likewise, it may be better for businesses to engage with schools through a reputable partner than to try to enter the system alone.

The government of **Luxembourg** worked with the business sector to set up a non-profit organisation with the mission of promoting entrepreneurship education in schools. This NGO (*asbl Jonk Entrepreneuren*), which is a member of the European network *JA-YE Europe*, runs different programmes in vocational education, the main one being the student company programme.

6.4. Conclusions

Responsibility for developing education and training policies belongs of course to national, regional and local government. However, a European approach to this field may help with ensuring more coordination between national policies, exchanging best practices and experiences and monitoring progress. ‘Benchmarking’ existing policies and measures will contribute to reaching a better understanding of current trends, and to setting goals to be achieved.

As to possible input indicators, these might include: whether entrepreneurship education is written into the national education strategy; whether time is allocated in school programmes; whether project-based methods are available; whether key actors in the field are engaged as partners; how many schools offer such programmes and activities and how many students participate.

7. FINAL RECOMMENDATIONS FOR ACTION

Public authorities:

- 1) Set up a national steering committee for entrepreneurship education, including representatives from different ministries and relevant stakeholders (including delivery partners and NGOs), with the objective of launching and developing a national strategy.
- 2) Create a legal framework that enables entrepreneurship education, and make the necessary funds available (e.g. for teaching the trainers, support tools, teaching material).
- 3) Introduce entrepreneurship as an explicit goal within the curriculum, and formally recognise entrepreneurship education activities. Develop steering documents (e.g. curricula and syllabi) and guidelines, and measure both the scope and effect of entrepreneurship education in schools.
- 4) Make career exploration mandatory, and include entrepreneurship in vocational guidance: the opportunity of learning about entrepreneurship should be offered to all students.
- 5) Raise awareness and improve knowledge about entrepreneurship education among school management, for instance by holding dedicated seminars.
- 6) Provide counselling for schools and teachers in designing VET curricula, and disseminate successful experiences and practices between VET schools. Create contact points to support teachers and schools wanting to engage in entrepreneurship education.
- 7) Help teachers to become better qualified in entrepreneurship: require entrepreneurship education when teachers are in university studies, and endorse the on-site training that teachers receive from recognised providers.
- 8) Support those non-profit organisations and NGOs whose mission is promoting and delivering entrepreneurship education and acting as intermediaries between vocational schools and businesses.
- 9) Grant ‘micro-scholarships’ to innovative and brilliant students in VET schools who want to start an independent activity and have a good business idea.

Vocational Schools:

- 10) Within the school, establish the role of an enterprise champion who is specifically responsible for school-enterprise partnerships, or encourage one or two teachers to take the lead.
- 11) Extend entrepreneurship to all fields of study in vocational education. Link practical training in specific fields of study with the objective of entrepreneurship, and provide support for students interested in starting up a business.

- 12) Present entrepreneurship in a practical way. Promote the use of methods based on real experience (project work with real enterprises or with the local community, student mini-companies, etc.).
- 13) Involve businesses in the entrepreneurship education process. Ensure access to experts (from businesses, business associations, and NGOs) who can provide training and ongoing support.
- 14) Organise talks and seminars by entrepreneurs to encourage students, and to make them aware of the potential and implications of becoming self-employed.
- 15) Encourage and motivate teachers, by ensuring access to appropriate training, information and guidance. Allow internships in enterprises in the country and abroad.

Business organisations, and other intermediary organisations:

- 16) Promote partnerships between VET schools and enterprises, and act as an intermediary in finding work placements for both students and teachers.
- 17) Provide expert help with preparing programmes and cooperate with schools on implementing entrepreneurship education activities, particularly through project work..
- 18) Encourage both young and experienced entrepreneurs to get involved in entrepreneurship education as role models.
- 19) Raise awareness among businesses, particularly at local level: start corporate social responsibility (CSR) initiatives that would motivate more business people to get involved in entrepreneurship education.

Coordination and support at European level:

- 20) Establish a European platform for entrepreneurship education, providing all the information, good practices, exchanges, finding partners, promotion material, etc.
- 21) Make funds available through existing EU programmes for students, teachers, entrepreneurship education organisations and VET providers. In particular, support trans-national projects with a European dimension.
- 22) Promote the exchange of good practices in teaching entrepreneurship; publish and disseminate case studies and good practices.
- 23) Make expertise available to all countries, for example by supporting visits by experts to deliver presentations. Support ‘peer learning’ and organise study visits to locations selected as good examples. Organise exchange meetings for entrepreneurship educators followed by the dissemination of results.
- 24) Promote campaigns to raise awareness among the general public about the importance of entrepreneurship, and in particular competitions and European awards for entrepreneurship programmes, courses and activities in vocational education. Set up or

support European awards (best school, best teacher, best student, best company), and/or introduce an Education category in the European Enterprise Awards. Encourage the involvement of private sponsors.

- 25) Monitor and benchmark the process in Member States, and disseminate information about the results.