



## Learning about occupational safety and health

Summary of a seminar organised in Bilbao (4 to 5 March 2002)

by the European Agency for Safety and Health at Work and the Spanish EU Presidency,  
in cooperation with the European Commission

### Contents:

1. Introduction
2. Case studies: OSH at school — primary and secondary education
  - 'Ar and Mi at school', Denmark
  - Examples of good practices for promoting health and safety in Italian primary schools
3. Case studies: OSH and adults — technical and vocational education
  - Improved integration of OSH into vocational education in German agriculture
4. Case studies: OSH and adults — university education
  - Tomorrow's doctors — putting occupational health and safety on the undergraduate medical syllabus in the UK
  - Integrating OSH in the systems of three Spanish universities
5. Case studies: Integrating the OSH system into education
  - New Act on the teaching environment for school children and students in Denmark
6. Case studies: Introducing OSH in education and training via campaigns and structural programmes
  - National programme of education for safety and health at work in Portugal
7. Discussion of success factors and findings arising from the national case studies
8. Round-table findings
9. Concluding remarks
10. Further information

### 1. Introduction

#### Objectives

The aim of the seminar was to provide an EU perspective on integrating — or 'mainstreaming' — occupational safety and health (OSH) into education. This topic is of growing importance across the Member States, as statistics have revealed that younger workers (aged between 18 and 24) are on average 1.4 times more likely to have a work-related accident as compared with other workers. The seminar aimed at contributing to the ongoing debate. A wide range

of national experiences and practices in the EU were brought together in order to share experience and stimulate discussion and debate on mainstreaming OSH into education policies and practices.

#### 'Mainstreaming'

What does 'mainstreaming health and safety' mean? Mainstreaming aims to make risk management principles and 'OSH thinking' an intrinsic part of the way decisions are made and actions are taken in the workplace, so that health and safety is not just an 'add-on'. It is easier to achieve this if workers and employers already come to the workplace well qualified with an understanding of OSH, and a developed culture of 'risk prevention'. This is of even greater importance at a time when the world of work is changing rapidly. There are new forms of work organisation, new technologies and new contractual relationships leading to ever more complex working environments, which all have implications for risk management.

#### 'General situation in the Member States'

An overview was presented of the general situation in the Member States. This sets a baseline for the current status on this topic:

- in most Member States there are OSH modules included in the curricula at most stages of education; these are in varying stages of development;
- similarly, in nearly all Member States there is some OSH legislation or guidance on training and education; some is at quite a general level, involving making requirements for training on OSH, whereas in other cases pupils actually have similar protection to workers;
- most Member States have had campaigns to introduce OSH issues into education; some have been national or regional initiatives while others have been locally led; and
- finally, there is some real innovation in tackling this issue, for example: appointing students at school as 'safety representatives' and giving them training and powers; impressive partnerships between different ministries, social partners and other organisations; and national programmes to mainstream OSH into all levels of education.

#### Case studies

Some examples of how OSH has been integrated into different levels of education were presented. Key findings from the cases were identified. All examples presented are recorded in the proceedings. A summary of some of these examples and findings is given below.

## 2. OSH at school — primary and secondary education

### Key findings

- Projects for young children need to make use of imagination and play.
- Projects for children can use their own environment as sources of examples of risks; parents should be involved in this process.
- Children should be educated in how to identify hazards, assess and manage risks; they should not be taught to avoid hazards altogether.
- OSH can be integrated into subjects taught anyway, or it can be handled separately.

### 'Ar and Mi at school' — Denmark

The issue of safety and health for children and young people is one of the key priorities of the Danish Government's action programme 'Clean working environment by the year 2005'. One of the topics is on minimising accidents for people under 25 years. The programme recommends that basic attitudes and knowledge in relation to safety and health should be provided in schools, enabling pupils to make a positive contribution to their own health and safety and to that of their classmates.

The aim of the primary school project 'Ar and Mi at school' is to strengthen safety and health training and integrate it into general teaching in primary schools. Ar and Mi are trolls and explain what a school is and why a good physical and psychological environment in school is important for pupils' well-being.

To establish this project, collaboration between a number of parties was necessary including trade unions, employers' organisations, the Danish Ministry of Education, the parents' and teachers' organisation and the Danish working environment service.

The project resulted in the production of various materials with the goal of investigating risks in the environment, following a storyline methodology. Materials include, for example, a troll house full of materials, a story book, teachers' folders, a board game and a web feature at [www.armi.dk](http://www.armi.dk)



Evaluation has shown that the concept is incorporated in daily teaching; for instance, the troll house is known and used in more than 50 % of public schools.

### Examples of good practice for promoting health and safety in Italian primary schools

The Italian National Institute for Prevention and Safety at Work (ISPESL) has created and distributed two tools to help primary school teachers of classes of children aged from six to nine. This work was initiated as ISPESL believes that schools, and primary schools in particular, can play a fundamental role in transmitting the basic values of safety to new generations.

The first tool is an interactive CD-ROM called 'At Luca's home', through which children, reacting to attractive graphics and animation, are made aware of the dangers of particular situations or actions in their own homes. Through the means of a game, the child identifies and removes all the dangerous situations and learns to behave in a safe manner within various home settings. A scoring system is available to evaluate if risks can be identified and the proper solutions are given. Everything is written in rhyme to stimulate the children even more.

### CD-ROM "At Luca's house"

#### Start of interactive game



Simulating a day spent alone at home, the pupil is asked to go around the home searching for and eliminating dangers.

The second tool is a short film entitled 'Glasses to see with', in which a grandfather, representing the values of experience and safety, asks his grandchildren questions and waits for the answers. These appear as subtitles and can be read aloud by children in karaoke style. The glasses, to which the title of the video refers, are a metaphor, allowing children to see and

thus avoid accidents in the home. For instance, a pot of boiling water spilling over, or a wet floor in the bathroom. The video is stopped now and then, to talk with the children about the hazards and solutions.

In 2001, both products were distributed to primary schools in the Molise region, in collaboration with the local education authority and with the involvement of OSH experts from ISPESL and the national crafts confederation. The teachers had already received information and training on OSH issues.

The children responded well to prompting, and proved capable of interviewing their parents about hazards and risks in the workplace. After further discussions with their teachers, they could give practical advice to their parents about their health and safety.

The project had positive results. This led to the launch of a plan funded by the Ministry of Health to disseminate the materials nationally. RAI Educational (the public television company) also provided assistance, by using its network of Italian primary schools with about 8 500 link points.

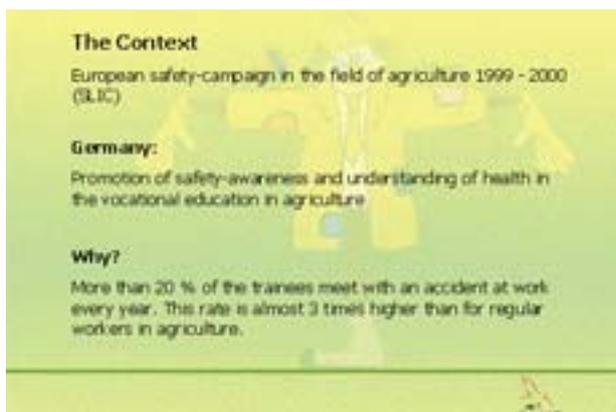
### 3. OSH and adults — technical and vocational education

#### Key findings

- OSH training needs to be practical and involve on-the-job training and experience.
- OSH training should look at issues like risk assessment and management, as well as the practical elements.
- Learning and skill development need to be evaluated.
- Students should be made familiar with OSH and the OSH system.

#### Improved integration of OSH into vocational education in German agriculture

In connection with the 'European safety campaign in the field of agriculture 1999' the health and safety authority of the *Land* of Brandenburg together with the responsible accident insurance authority carried out a project to improve the integration of OSH into vocational education of tomorrow's farmers, gardeners and forestry workers. Both ministries responsible for vocational education in agriculture supported the project.



It had been found that teachers previously had a poor knowledge of OSH, that OSH was not specifically taught and no up-to-date teaching materials were available.

A group of OSH experts picked suitable topics, prepared lectures and carried them out, following thorough preparations. To get long-term effects, the lectures were documented and summarised in a manual for future use. The second edition of the manual was published as a CD-ROM, and developed with the help of students.

Topics in the manual include, for example:

- an overview of basic elements of European and German OSH-law and systems;
- legal protection of young persons;
- problems of animal husbandry;
- problems of servicing machines;
- use of hazardous chemical agents in agriculture;
- typical health risks and diseases in agriculture and possibilities of prevention;
- safety in workshops; and
- construction work in agriculture.

Advanced training for teachers in vocational schools was organised. It resulted in a very high rate of participation. Teachers valued the technical support to develop their expertise on OSH.

### 4. OSH and adults — university education

#### Key findings

- It is very difficult to succeed in convincing higher education authorities to include OSH in degree and professional courses; possible reasons for this are that 'risk' is not seen as an academic concept and that there is a lack of competence to teach it.
- Successful integration may rely on persuading sympathetic professionals and academics to assist.
- Professionals are responsible for others' safety and not just their own; therefore they are a key target group.

#### Tomorrow's doctors — putting occupational health and safety on the undergraduate medical syllabus in the UK

The Health and Safety Commission (HSC) for the United Kingdom has a programme to include the teaching of risk in schools and on further and higher education courses, particularly where these provide entry to professions where safety is critical. This is part of the government's strategy 'Revitalising health and safety'. It also aims to improve health and safety awareness in key professions. Medical staff are exposed to risks in many areas of their work, for example, violence, infections, manual handling and stress. They often manage — and are in a position to influence — other healthcare staff exposed to the same risks. They generally receive no training in occupational health and safety.

### Objective

The HSC's Health Services Advisory Committee (HSAC) had a longstanding aim to engage doctors more in health and safety. The initial objective was to ensure that doctors received basic information about occupational health and safety during their undergraduate training.

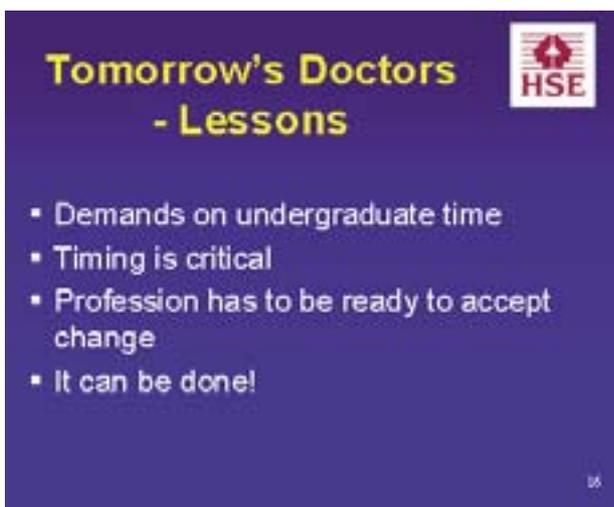
### Tactics

The objective was achieved by:

- persuading the General Medical Council (GMC) to include OSH in the objectives for undergraduate medical training;
- agreeing with the heads of medical schools more detailed guidance on the OSH content of the syllabus.

### Outcome

There was an agreement by the GMC to add OSH objectives to its 'Tomorrow's doctors' guidance. A joint working group between HSAC and the Council for Medical Schools was set up to draft objectives for the GMC and to outline the guidance for medical schools. The next steps are already planned.



### Integrating OSH in the systems of three Spanish universities

A model for a university system was presented, involving three universities (Barcelona University, Pompeu Fabra University, and the Technical University of Catalonia), the Spanish Occupational Safety and Health Institute (INSHT), and the Foundation of Mutual Universal. The model was created in 1999 with the aim of training the occupational risk prevention professionals of the future.

The Spanish education system is very similar to systems in other countries, especially at university level. The characteristic for a university system is that a certain level of attainment has to be reached. One specific objective is to include any knowledge that is essential for correctly preventing occupational risks.

### Programme

A minimum number of credits have to be obtained. There are four main subject areas according to the Spanish Act — safety, hygiene, ergonomics and psychosociology.

The student must pass all mandatory subjects in order to gain access to the masters degree on preventing OSH hazards.



Degree:	Master on Occupational Risk Prevention
Type of Degree:	Master by the universities UB, UPC and UDF
Professional accreditation:	Technician in Occupational Risk Prevention (certified by the Occupational Department of the Generalitat de Catalunya)
Specialties:	Occupational Safety / Industrial Hygiene / Ergonomics / Psychosociology
Number of credits and teaching hours:	185 credits, 1.650 teaching hours
Duration:	2 academic years

### 5. Integrating the OSH system into education

#### Key findings

- Legislation can be used to assist the integration of OSH into education.
- The OSH system can be integrated into the education context by treating students effectively as 'workers', for example creating pupil 'safety representatives', by involving students in risk assessments and by including students in a statutory accident insurance system.

#### New Act on the teaching environment for school children and students in Denmark

Denmark has introduced a new act that helps to integrate OSH into education, based on the following principals:

- all students have a right to a good working environment in their school;
- teaching should take place without creating risks;
- students should cooperate with the safety organisation of the school in order to create a good working environment;
- students should be part of the safety organisation of the school; and
- a reasonable physical, psychological and aesthetic environment should be maintained.

The new Act was partly based on the experience of an initiative carried out in primary and secondary schools at a regional level in Roskilde. Here pupils learnt how to carry out a risk assessment, were involved in notifying work environment problems to the students' safety organisation and had nominated student safety representatives. The outcome in Roskilde was that good standards were developed through student participation. As well as improving the education 'work environment' of the students, they were better prepared to make a positive

contribution to the work environment in their chosen profession.

## 6. Introducing OSH in education and training via campaigns and structural programmes

### Key findings

- Initiatives on integrating OSH into education can be taken forward on a national, regional or local level as campaigns or structural programmes.
- There is scope for international cooperation in the development of campaigns and structural programmes.

### National programme of education for safety and health at work in Portugal

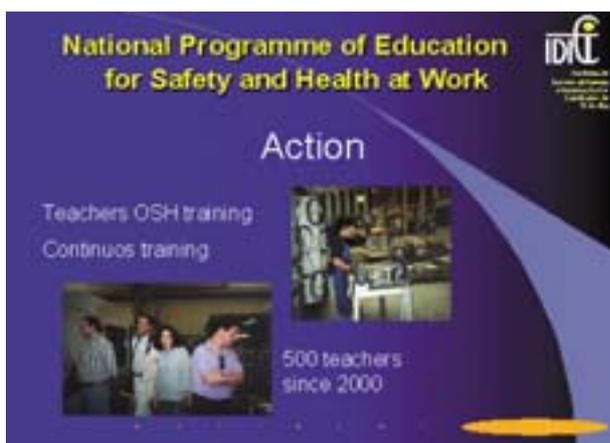
Government and social partners considered as a priority the development of measures to improve work conditions. One way of achieving this was seen as the integration of OSH content in general and technical education curricula, including teacher training in these subjects. This was seen as being a key measure in tackling the causes of work accidents and ill-health. Therefore a national OSH education programme (PNESST) was developed.

The Instituto de Desenvolvimento e Inspeção das Condições de Trabalho (IDICT) and Education Ministry are implementing the programme based on:

- development of curricula and inclusion of OSH content in the training offered in compulsory, further and higher education;
- training for trainers and teachers; and
- awareness-raising on OSH within schools.

The national programme has an image and a logo, and the slogan is 'Safety and health at work: learn today — practice forever'.

Progress is being made; for example, training for teachers has begun and, since 2000, around 500 teachers have been trained so far.



## 7. Discussion of success factors and findings arising from the national case studies

Success factors were identified along with some general observations and findings.

### Key success factors in the national projects

- Risk education and OSH need to be seen as high priorities by stakeholders.
- Teaching these issues should start at the beginning of a child's education.
- There has to be collaboration with education and employment ministries and labour inspectorates and institutions, although this can be difficult owing to varied organisational structures and local circumstances.
- Health and safety professionals need to work in partnership with education professionals.
- It is important to engage all possible intermediaries as part of learning OSH as a lifetime skill: local teachers, employers, workers and their representatives, parents, pupils, as well as experts should all provide support.
- OSH should be integrated into the curricula with an appropriate balance of theory and practice.
- OSH should be viewed as a crucial element of training for specific employment, not simply an add-on or a one-off campaign; OSH must be presented as a key part of 'doing the job right'.
- Teachers and trainers need to be trained in risk education and OSH. It is not enough to simply create tools and hand them over to the teachers.
- Teachers need resources and skills to pass on knowledge on OSH. The methods and resources should motivate pupils.

### Observations

- Risk education should first make children aware of what is dangerous in their environment (at home, at school and at play) and what they should do to help make themselves and those around them safer. As a child grows up, their knowledge of risk assessment and management should develop. As young people make career choices their risk education should become more specialised to cover OSH issues, including links to their chosen future profession.
- There are already several examples of tools that have been specifically created for teaching OSH, but information needs to be pulled together to evaluate and analyse the quality and overall impact of these tools.
- There are risks in the teaching environment that teachers may not fully appreciate. It is necessary to look at the risks of being educated, such as the use of equipment, including computers, manual handling (for example, school bags),

stress and bullying among children. The best environment to learn about OSH will be a healthy and safe one!

- A lot of OSH focuses on safety, hazard spotting and identification and not health issues. Health issues need to be integrated fully into the debate.
- Despite cultural and legal differences, there is considerable potential for sharing experience on initiatives on integrating OSH into education across Member States.

### 8. Round-table findings

A keynote speech from Jean-Luc Marié, Director-General, INRS, France, was given to set the scene for the round-table discussion. He summarised work carried out in France since the early 1990s to integrate OSH into vocational education. He then described developments at international level involving the International Social Security Association's working group on vocational education. He highlighted some conclusions from its first international seminar, held in November 2001, on integrating OSH in vocational education. The working group has been cooperating for several years to achieve international recognition of the skill to 'manage occupational risks'.



Possible options for future action at EU level had earlier been identified. These options were discussed by key representatives from the European institutions and the European social partners as well as government representatives from Belgium, Denmark and Spain, the so-called 'troika' countries. The following findings emerged from these discussions:

### What is available at European level?

- Funding sources are available: for example, Leonardo, Socrates, Comenius and the European Social Fund.
- There are already a number of European projects that have addressed OSH education but:
  - they were one-off projects: when the project finished there was no follow-up action;
  - several subjects were tackled, but in an uncoordinated way;
  - when the project ended, there was little evidence of sharing results or sharing good practice.

### What action is needed at European level to take this issue forward?

- A European strategy for OSH in education is needed, including:
  - The definition of core competence; what should be included; what do pupils or students have to know?
  - If we want transferability of diplomas, a system for agreeing points and credits is needed.

*'It is necessary to analyse, evaluate and recognise the learning processes that people have to undergo, to obtain certification of skills',*

Francisca Arbizu, Director, National Institute of Qualifications, Spain.

- Examination of the possible sources of funding identified to determine how far they could be used to facilitate implementation of OSH in education initiatives at European, national or local level.

*'There are already funding schemes available which could further help our aims',*

Hans-Horst Konkolewsky, Director, European Agency for Safety and Health at Work.

- There should be sharing of existing good practice.

*'Under Article 149 of the EC Treaty, the Community contributes to the development of quality education by encouraging cooperation between Member States by supporting and supplementing their action if necessary',*

Bernhard Jansen, Director, Directorate D, Employment and Social Affairs DG of the European Commission.

- The EU health and safety strategy will act as a major framework within which OSH education and training within the wider context of the prevention culture can be developed.

- The EU employment guidelines could be examined to see if the OSH section on 'training' could be extended to include 'education'. This would serve as a basis for EU coordination activities on issues such as the exchange of good practice, the development of common curricula, the organisation of exchanges, cooperation and networking.

*'The European employment guidelines already provide us with the justification to get active in the area of health and safety 'training' by making specific reference to 'health and safety training'. This would give us a very firm basis for action and cooperation at European level. I am sure that the Council of Ministers and the EU social partners could not disagree on the importance of a joint coordination strategy between the Member States on the mainstreaming of OSH into national education systems',*

Peter Skinner, MEP, European Parliament.

### Views expressed during the round-table discussion:

*'Health and safety education and awareness-raising, which were at the heart of the discussions throughout this seminar, should be for all and should not start only with entry into the world of work.'*

Bernhard Jansen, Director, Directorate D, Employment and Social Affairs DG of the European Commission.

*'The goal is clear: nobody in the EU should enter the labour market without sufficient knowledge of the general and specific health and safety risks and of how to deal efficiently with such risks. We need to equip future working generations with a real preventive culture, one that lasts and can be relied upon in a world of fast changing industrial innovation.'*

Peter Skinner, MEP, European Parliament.

*'Efforts should be concentrated on creating attitudes and values, from the beginning starting in primary schools.'*

Florentino Alonso, Deputy Director, National Institute for Safety and Health at Work, Spain.

*'Especially with regard to mainstreaming, the European Union may have an important role to play, for example, the creation of indicators, open coordination and exchange of best practices will give the Member States useful instruments to make this cross-sector cooperation work. It will show if nothing is done.'*

Morten Bergulf, Danish Ministry for Employment.

*'The OSH administration in Belgium, in agreement with the inspection services of the material and organisational infrastructure of education establishments, has developed an instrument for informing all the education establishments and the directors on the safety and health conditions in their establishment. This and other examples have been tested in Belgium and have a strategic value for the development of a safety culture. To attach a European dimension could give an extra value.'*

Marc Heselmans, Ministry for Employment, Belgium.

*'Until now EU policy for safety and health at work has related essentially to putting in place preventive measures and improving 'technical' protection measures. Employers fully recognise the value of this. However, UNICE believes that efforts in this context can only bear fruit if henceforth this policy is widened into a strategy to raise risk awareness which goes beyond a strict definition of the active population and the workplace. It is necessary that aspects relating to safety and health are integrated into all stages of education and training.'*

Natascha Walke, UNICE.

*'Social partners have a key role to play, involving both legislative and non-legislative measures. Trade unions can take part in the education process; they can have a considerable impact on children via their teachers, who often will be union members. Employers can provide resources to schools and become examples for students.'*

Owen Tudor, Trade Union Congress.

## 9. Concluding remarks

Mr Bernhard Jansen thanked the Spanish Presidency and the Agency for holding this event, which was well timed for consideration as part of the new European strategy on occupational health and safety.

The communication from the Commission 'Adapting to change in work and society: a new Community strategy on health and safety at work 2002-06' has now been launched. There is a section on 'Strengthening the prevention culture' which mentions the importance of education:

*'Education does not start with entry into the world of work, as the Economic and Social Committee has pointed out: it should be part and parcel of the school curriculum, either with a view to making people more aware of the problem (much like road safety is taught in some countries), or as a vocational subject in its own right. The most important element here is continuing vocational training. This must be dispensed regularly and be geared to the realities of day-to-day work, with a view to impacting directly on the work environment.'*

The Spanish Minister of Labour and Social Affairs, Mr Juan Carlos Aparicio, closed the seminar by stressing that health and safety values have to be integrated in a progressive way, from primary school onwards and emphasising the value of working together in Europe:

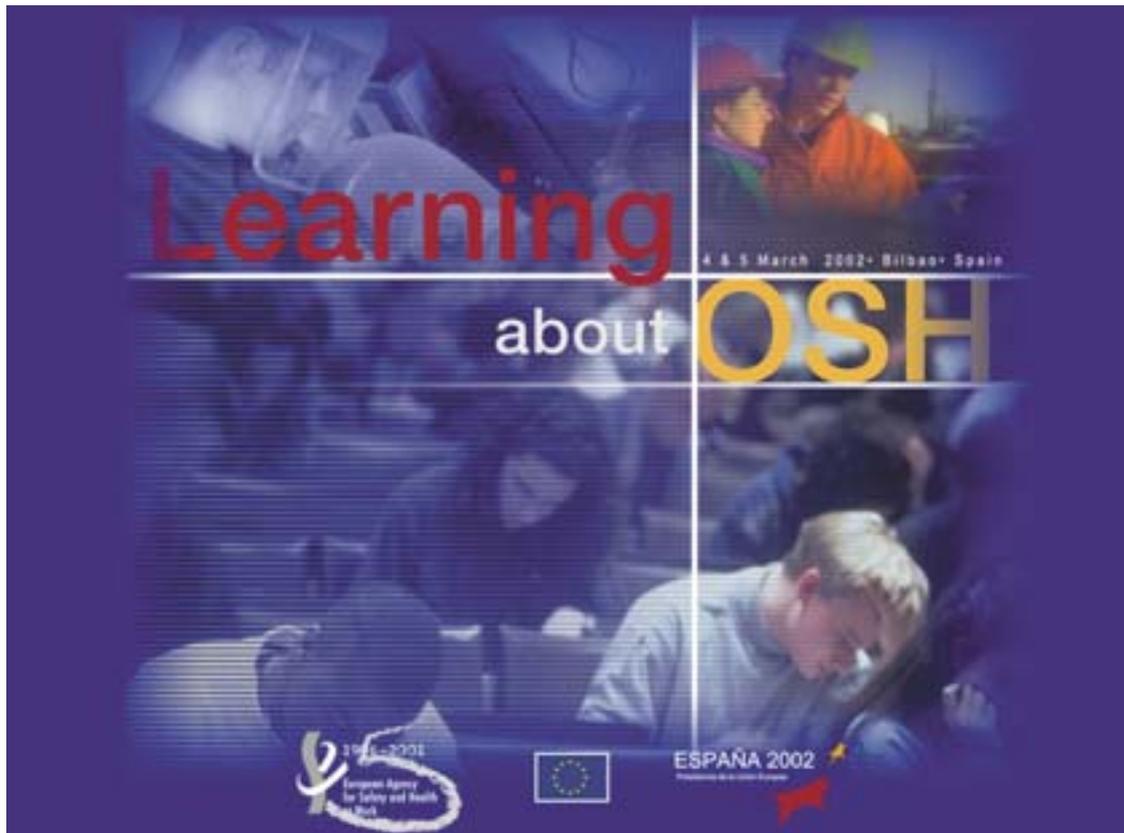
*'I believe that we have to make use of synergies and combined forces to produce mutual support in this field. I am convinced that this seminar will provide the impetus necessary to promote cooperation between our countries in matters of education and training.'*

The Spanish Minister emphasised that the Spanish Presidency of the European Union sees 'prevention' in occupational health and safety as a vitally important topic and therefore it is a priority among its objectives.

The Director of the Agency, Mr Hans-Horst Konkolewsky, emphasised the clear message from this seminar: 'start young, stay safe'.

### 10. Further information

The Agency has developed a web feature on integrating OSH into education ([http://europe.osha.eu.int/good\\_practice/sector/OSH\\_education.stm](http://europe.osha.eu.int/good_practice/sector/OSH_education.stm)). This feature includes the full proceedings of the seminar (with all case studies featured in the seminar and Power Point presentations where available), useful links on this topic and other resources.



Gran Vía, 33  
E-48009 Bilbao  
Tel. (34-944) 79 43 60  
Fax (34-944) 79 43 83  
E-mail: [information@osha.eu.int](mailto:information@osha.eu.int)  
<http://agency.osha.eu.int>



**FORUM** is published by the European Agency for Safety and Health at Work.  
The series addresses selected issues of key concern to the Agency's network and the wider OSH community.  
By drawing on the advice and expertise of the Agency's network partners, **FORUM** aims to provide information and to promote discussion.  
Further information on European Agency activities is available on our web site:  
<http://agency.osha.eu.int/publications/forum/>  
**FORUM** is published in English, French, German and Spanish.

ISBN 92-95007-63-8