

Learning about occupational safety and health

A seminar organised in Bilbao (4 and 5 March 2002)
by the European Agency for Safety and Health at Work
and the Spanish EU Presidency,
in cooperation with the European Commission

Proceedings



European Agency
for Safety and Health
at Work

A great deal of additional information on the European Union is available on the Internet.
It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

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Day 1

Welcome and introduction

Hans-Horst Konkolewsky

Director of the European Agency for Safety and Health at Work, Bilbao, Spain

The director welcomed all participants to the joint Spanish EU Presidency and European Agency seminar, organised in collaboration with the European Commission. He expressed his thanks to the Spanish Presidency and especially to the INSHT and its director for the excellent cooperation during the preparation of the seminar.

The director summarised current European and international initiatives in this area. The aims of the seminar were then outlined; for the first time, to provide an EU perspective to the issue of integrating — or ‘mainstreaming’ — occupational safety and health (OSH) into education and to contribute to the ongoing debate. The seminar would bring together a wide range of national experiences and practices in the EU in order to share these and stimulate the discussion on the mainstreaming of OSH into education policies and practices. The timing of the event was seen as perfect, as the topic was expected to be a key component of the new Community strategy for OSH.

Mainstreaming was defined as making risk-management principles and ‘thinking OSH’ an intrinsic part of the way decisions are made and actions are taken at the workplace, so that OSH is not just an ‘add-on’. It is easier to achieve this if workers and employers already come to the workplace well qualified and with an enhanced understanding of OSH — and with a developed ‘risk-prevention’ culture. Therefore, it is during the various stages of childhood, youth and early adulthood that education at all levels can play a key role in ‘boosting’ the ‘prevention culture’.

This is seen to be of even greater importance at a time when the world of work is changing rapidly with new forms of work organisation, new technologies and new contractual relationships.

The cases to follow provide examples of how OSH has been integrated into all levels of education. They also give information about specific awareness raising campaigns and examples of how some Member States have integrated OSH-systems into education.

Some information was presented on the position in Member States to help set the context. This included:

- In most Member States, there are OSH modules included in the curricula at most stages of education; these are in varying states of development.
- Likewise, in nearly all Member States, there is some OSH legislation or guidance on training and education; some is at quite a general level, for example by making requirements for training, whereas in other cases, pupils effectively have similar protection to workers.
- Most Member States have had campaigns to introduce OSH issues into education; some have been national or regional initiatives whereas others have been more by individual motivation.
- Finally, there is some real innovation in tackling this issue for example, appointing students at school as ‘safety representatives’ with training and powers, impressive partnerships between different ministries, social partners and other organisations, and national programmes to mainstream OSH into all levels of education.

The findings of this exercise show there is a lot of good experience within Member States to share and that OSH integration into education is a very ‘live’ issue in all Member States.

Opening address

Leodegario Fernández Sánchez

Director of the National Institute for Safety and Hygiene at Work, Madrid, Spain

The director welcomed participants to Bilbao on behalf of the Spanish EU Presidency. The seminar was identified as one of the key events of the Spanish Presidency. This is because training, or to be more specific, the integration of OSH into education and into work is a central element in the Spanish (and no doubt European) strategy, in trying to improve the prevention of occupational risks.

In Spain, a certain frustration was felt because progress in this field has been so slow. There has also been a lack of a stable framework of support within the institutions of the Union to enable a sharing of experience. On the other hand, a limitation was identified that because the context can be different, this sometimes hampers the direct exchange of experience. But the seminar should enable learning about recent initiatives, which can act as the necessary starting point from which they can be expanded and improved.

There should be a commitment to a systematic development of training models in prevention of occupational risks. As well as sound content, teaching should focus on attitudes and values which make it possible to create the necessary culture of prevention. This training should not just be restricted to 'workers, technicians and experts', but it should cover the whole population by starting as early as primary education.

The work of the Advisory Committee on Safety, Hygiene and Health Protection at Work of the Employment and Social Affairs DG of the European Commission was outlined, including its document on training prepared in 1998. This stated that a training strategy has to be broader than the training obligations contained in the directives. The report indicated that the following groups could be distinguished:

- the future citizen and the future worker — children and young people in education;
- the future worker during vocational training;
- the worker joining an enterprise;
- the workers' representatives;
- the experts in prevention of occupational risks.

There should probably be a triple level of integration of prevention in educational systems:

- Integration of specific training in prevention of occupational risks within other specialisations. This involves moving towards the possible definition of common training programmes, at least in their content, within the EU.
- Integration of 'OSH content' into all vocational training, whatever the occupation concerned and whatever the type and level of risks. Clearly, the content should be adapted to the specific requirements of each occupation. But, at any cost, a worker starting work for the first time without being given the necessary prevention knowledge during preliminary training must be prevented.
- Promotion of a 'transversal' type of integration in all teaching. This means that without reducing the essential content in each case, in all teaching at all levels of education, the value of 'prevention' and of 'health' must be promoted as basic elements of education. This applies particularly to compulsory education, but also to vocational and university training.

The seminar aims to provide a stimulus to the series of activities in the EU and to the general integration of prevention into education. The seminar was seen to promote the creation of a European framework for discussion and support that should strengthen every one of each country's initiatives. This should also be reflected in the new European strategy for OSH. This should help achieve the goal of fully linking training in prevention into employment, training or research programmes, among others.

The reflections from the seminar should reach and be considered in the guidelines on employment in the context of each country and in the Union as a whole. Prevention of occupational risks was seen as a question for everyone, although not all have the same duties and responsibilities. But, this effort would need to be made in the most integrated and coordinated way possible so that it is efficient and lasting.

The director assured participants of Spain's tremendous interest in advancing this work, and from now on will seek involvement in any project designed to achieve better figures and levels in training for the prevention of occupational risks.

PART 1

OSH at school — primary/secondary education

Susanne Ulk

Consultant on education and training

Arbejdsmiljørådets Service Centre (the Service Centre of the Working Environment Council), Denmark

Title: Ar and Mi at School — a complete teaching package to improve young children's awareness of OSH

Introduction and aims

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' come from the first two syllables of *ArbejdsMiljø* ('working environment' in Danish). They are two trolls that explain through activities what a school is and why a good physical and psychological environment at school is important for the pupils' wellbeing.

Underpinning the project is the idea that good health and safety attitudes and habits should be developed at school, and that it is important to encourage children to take a constructive part in safety and health work at an early stage of their school careers.

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

The teaching of health and safety has a high priority in legislation and the school curriculum. In the Primary School Act, high priority is given to the teaching of health and safety; it is incorporated into a number of primary school subjects and health and safety training is compulsory for all school grades. The subjects of education, business and labour-market studies feature prominently. For these reasons, the project is part of a campaign and strategy at national level. There is a new act called 'Teaching environment for schoolchildren and students'. This will be addressed later on in this seminar.

Collaboration

To establish this project, collaboration between several parties was necessary:

- trade unions;
- employers' organisations;
- the National Association of Local Authorities in Denmark;

- the Danish Ministry of Education;
- the parents' organisation 'School and society';
- the National Teachers' Organisation;
- the Danish Association of School Managers;
- the pupils' organisations FLO and DEO;
- the Danish Working Environment Service;
- the Sector Safety Council for Education and Research;
- representatives from a number of occupational safety and health projects.

Methodology

The project resulted in several materials for investigating risks in the learning environment, using a story-line methodology. The Ar and Mi project incorporates and encourages project work. It is a methodology where pupils actively and deliberately investigate their environment, form concepts and ideas about it, try to understand it, form opinions about it, and take action on it. The pupils discover how they, as citizens in a democratic society, can influence their surroundings according to the views and opinions formed during the process.

The project work methodology encourages pupils:

- to organise their thoughts;
- to express their thoughts as ideas for presentation and discussion with others;
- to make tentative conclusions;
- to assess the quality of investigations;
- to discuss possible improvements.

Materials

- A troll house full of materials.
- Story book: short stories in which Ar and Mi discover what is important.
- Teachers' folders (materials and guidance): including exercises and games on items such as friendships, cooperation, rules, lifting, work positions, dangerous and safe substances, indoor air, lighting, noise, classroom layout, first aid, playground layout and risk assessment.
- Board game: Ar and Mi and their friends have to follow a route through the troll forest to the island in the lake where the troll school is built.
- Stories (books) that can also be used in Danish language training (items on indoor climate, psychosocial environment and noise).
- Teachers' book: scrutinising the school's work environment.
- Ar and Mi magazine.
- Web site: www.armi.dk: for example exercise on 'spot the health and safety risks'.
- Catalogue of ideas (for different grades) in three parts: (1) detailed information on current health and safety topics, (2) how we did it: practical examples, and (3) appendices: poems, short stories, and statistics on health and safety.
- Customised courses for teachers and school counsellors (theoretical and practical level).

Project evaluation

Evaluation has shown that the concept is incorporated in daily teaching at many State schools (there are approximately 2 400 State schools in Denmark) despite the high cost of the education pack. For instance, the troll house is known and used in more than 50 % of these schools and 26 000 copies of the Ar and Mi magazine are issued twice a year.

Giuliana Roseo and Emanuela Giuli
National Institute for Safety and Health at Work (ISPESL),
Department of Documentation, Information and Training, Italy

Title: Examples of good practice in promoting health and safety in primary schools

Introduction and aims

The Italian National Institute for Prevention and Safety at Work (ISPESL) committed itself to promoting a new culture of prevention, at home as well as at work.

This strategy began several years ago and is based on information campaigns. Conferences for several associations (e.g. parent associations, employer associations, trade unions, and educational institutions) are still given and booklets ('Safety at home' for example) are distributed. Attention is paid not only to the home, but also to the working environment using tools such as the Internet, CD-ROMs and videotapes. These have been developed for school children and are just as applicable for safety in the home as in the workplace. It is important to focus on the home because accident figures are greater there than at work (approximately 3.5 million home accidents in Italy according to ISTAT). These are caused by the structure of our homes, the household appliances and tools that are used there, but above all by incorrect behaviour.

ISPESL, believing that the school and primary schools in particular can play a fundamental role in transmitting the basic values of safety to new generations, has created and distributed two tools to help primary school teachers for classes of children aged from six to nine disseminate the principles of OSH.

Materials

The first tool, created by ISPESL in cooperation with the CSESI-University of Perugia, is an interactive CD-ROM called 'Luca's home', through which children, by reacting to attractive graphics and animation, are made aware of the dangers of particular situations or actions in their own homes. In a game, the child removes all dangerous situations and learns to behave in a safe manner within the various home settings, for example bedroom, bathroom, kitchen, garage, and living room. This game helps children to investigate and to remove the risks so that they can assess them. The text is written in rhyme to stimulate the children even more.

The game starts at the beginning of the day, moving from the bedroom, to the bathroom, kitchen and garage. In the end, the child returns to the bedroom to eliminate other sources of danger, which differ from those encountered in the morning (e.g. placing books on a chair to be able to reach on top of a cupboard, rather than using a stepladder).

The player can view the entire setting by moving the mouse to the left and the right of the image. By clicking on furniture, clothes and accessories, the child can see whether it is a source of danger. When an object is clicked, a box appears containing a question on how to eliminate the source of danger for the player to answer by clicking. The child scores points for correct answers and loses points for incorrect answers.

Every source of danger correctly identified and eliminated is placed in one of the boxes on the right of the screen. For example, the risks in the bedroom involve: a television placed on a pile

of books, an electric blanket, smooth-soled slippers, an open drawer, and a bedside lamp covered with an item of clothing. When all the sources of danger in one location have been eliminated, the player is able to continue to the next location by clicking on the door. At the end of the game, the child is presented with his or her final score.

The CD-ROM contains study materials aimed at educators (parents and teachers) and also at older children. More in-depth knowledge, awareness and background are included and there is psychological information on why we underestimate the dangers in our homes. Information sheets on first aid and measures to be taken during accidents are also available, as well as a glossary of OSH terms.

The second tool, created by ISPESL in cooperation with IRSAD (Research Institute for Safety in the Home Environment), 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. The questions and answers appear as subtitles and can be read aloud by children, in the style of karaoke. The glasses that the title of the video refers to are a metaphor. They allow children to see and thus avoid accidents in the home.

The video shows typical family scenes in which the mother is doing chores while the children are playing or doing homework. The scenes that follow show how an accident in the home typically happens, for example, a pot on the fire with boiling water that spills over, or a wet floor in the bathroom, etc. The 'accidents' are reproduced in six home settings and the video should be paused after each accident to talk with the children about the risks and the solutions. When the accident gets to a critical point, drawings are presented illustrating the accident and the injured parts of the body. Other applications are the mother who explains how the accident happened, a doctor who explains what help should be given to the injured child, reconstructions with an actor playing the part of the grandfather, again in karaoke style, the risk or danger, or the action required to avoid accidents of the sort portrayed.

Evaluation

The CD-ROM was tested in several classes in a school in Rome. Children had to explain what messages they had learned through using the CD-ROM. This resulted in drawings of hazards or risks, for example a hairdryer in the bath and the risk of electrocution. It is interesting to note that the drawings and the expressions used by children showed a growth in their awareness of risks present in the home. Children fully understood the spirit of the game and its subject matter. In their drawings, they sought to reflect the contents of the game, using suitable original phrases and images, and making use of acquired experience.

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 association 'Ambiente, Sicurezza e Qualità' of the National Crafts Confederation.

There were discussions between teachers and safety experts on the CD-ROMs, educational and study materials relating to the two tools. It should be noted that the teachers had already received information and training on OSH issues.

The best means were chosen to transfer the information to children. The CD-ROM 'Luca's home' and the video 'Glasses to see with' were shown to children and further feedback from children has been obtained.

Working in groups and doing exercises, the children created drawings, posters, and reports to check what they had learned.

The children responded well to prompting, and proved capable of interviewing their parents about hazards and risks in the workplace. In fact, after further discussions with their teachers, they were given an 'interview' module, containing the following activities:

- interview mum and dad;
- ask mum and dad to describe their job;
- ask whether they run any risks during work, for example using machinery, equipment or tools;
- ask whether there are hazards in their work environment or if they use dangerous substances or products;
- ask if there have been any accidents or occupational diseases where they work;
- do a drawing or an essay showing the risks run by mum and dad at work.

The children were able not only to interview their parents but also to give them practical advice about their health and safety.

Drawings, posters, reports and interviews were presented in a seminar in order to share the experience with other schools and other actors throughout the region.

Conclusion

The basic aim of this initiative is to make a contribution, in the context of the school, to training and educating citizens and workers to be aware of OSH values, avoiding scaring children off, through play and having fun. This can be achieved with the support and participation of parents and educators.

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

Yannis Grigoriou

MSc Sociologist, Director of Health and Social Security Department of the City of Volos, Greece

Title: Promoting skills for safety and health at school and in the community

Introduction and aims

The goal is to create good citizens, starting with good students. To achieve this, the focus has to be on managing risks to help society.

Some comments regarding safety:

- OSH is an important topic for everyone; a safe environment has to be created. For school children, this means a safe school and home environment.
- A requirement to show respect to others should be incorporated into OSH, thereby enabling a multicultural environment of social awareness to be created.
- Creating safe schools implies much more than simply having no accidents.
- Schools are good places to initiate strategies and policies: developing plans, wider community participation, promoting pupils' skills, and networking dissemination.

How can we build capacities within the school community?

- As far as teachers' training is concerned, knowledge transfer is not enough by itself.
- Pupils have to be actively involved and take part in the community. Pupils should not be isolated in a world of fun and no worries.
- A safe environment culture has to be created, going beyond the school environment.

What methods and policies can initiate and implement accident-prevention strategies in schools? In our case, the question of strategic planning has received much attention. Right from the beginning of the campaign, questions about efficiency, viability and dissemination practices were raised. This left us with no alternative but to adopt a whole school approach.

This approach involved a whole series of issues that needed to be addressed right from the start:

- whole school community involvement;
- wider-community participation;
- developing of good practice models;
- holistic approach to accidents prevention;
- dissemination strategies;
- mainstreaming.

Safe school project

The idea of the safe school originated in the healthy cities movement and found its expression in the healthy schools network. These two very important movements supplied the content and inspiration for a holistic approach to accident prevention.

DISCUSSION ON OSH AT SCHOOL — PRIMARY & SECONDARY EDUCATION:

Comments were made and questions were asked by the audience, and speakers and others responded.

In Ireland, a new campaign has been introduced for children in the agricultural sector, called 'Childsafe: be safe on the farm'. It aims to raise awareness among young Irish children and their families about dangers on the farm. This is particularly relevant because of the current high rate in agriculture of accidents involving children. The resource includes a CD-ROM on which there is a game, a video and teachers' lesson plans with activities to give to children to complete with their parents at home. The CD-ROM includes a 'virtual' visit to different parts of a farm providing opportunities to identify different hazards. It has information on what to do and what not to do. They have sought to keep any additional burdens on teachers to a minimum.

The Italian project involved the children interviewing their parents about the risks in their workplaces. In some situations, this gives a feeling of mistrust, because it implies the government is interfering with what you are doing at home. How was this problem tackled?

In testing projects, it is important to involve the parents so that they feel involved.

Parents should be encouraged to be present in the classroom, to experience what goes on there and to talk about their work. This helps teachers in the classroom.

To what extent are the children involved in designing the materials?

The children were not initially involved. The teachers wanted to create materials for small children. These materials were tested on pupils and they gave feedback by saying 'this is fun' or 'this is not so good', etc. Their comments were taken into account and the material was adapted accordingly.

Children learn very quickly, so the messages must be ever more challenging.

There was an awareness-raising campaign for teachers and on the best way to engage the children. Examples of methods for engaging children include displaying the best essays, exercises, and posters at a seminar and a contest between classrooms where awards were given.

Teachers should be asked for advice on the best ways of engaging children.

KEY FINDINGS

From discussion, the following findings emerged for 'OSH at school — primary and secondary education':

Projects for younger children need to make use of imagination and play.

- Projects for children can use their own environment as sources of examples and case studies about risk — parents can also be involved.
- We should be educating children in how to identify and address risks, not trying to get them to avoid all hazards.
- Can teachers fit OSH into a crowded curriculum or can it be integrated into other subjects?

OSH AND ADULTS — TECHNICAL & VOCATIONAL EDUCATION

Arja Äyräväinen
Finnish Institute of Occupational Health, Finland

Title: On-the-job learning in the Finnish educational system: training work instructors

Introduction and aims

From 2001 onwards, all vocational study programmes must include on-the-job learning, in which students carry out service or production tasks. The aim of the on-the-job learning organised at workplaces is to improve the vocational skills of students and their readiness to move into the workforce. This on-the-job learning should include OSH matters. It has been estimated that, every year, 20 000 to 30 000 students take part in on-the-job learning.

Background

On-the-job learning is based on the Vocational Education and Training Act from 1998, the basic educational syllabus, recommendations of the Finnish State and the social partners and the European Social Fund supporting the development of on-the-job learning.

The study programme

Part of the educational programme is performed on the job, so that the student learns at the workplace. These students (20 000 to 30 000 per year) are between 16 and 19 years old.

However, the drawback of this is that there is a lack of trained workplace instructors. Therefore, in autumn 2001 the Finnish Institute of Occupational Health began to train work instructors whose task is to guide students in the workplace. In all, 27 people took part in the training (14 men and 13 women, all over 24 years old); they represented a wide range of business areas and professions (e.g. supervisors, nurses, technicians, safety managers, etc.) and came from small, medium-sized and large companies. Some of them had OSH responsibilities, although often not full-time. With this course, they get extra knowledge and become experienced so that they can influence the industry in the future regarding OSH as part of a company's business.

This training project was supported by the European Social Fund (ESF); it was organised with the National Board of Education and the Department for Occupational Safety and Health of the Ministry of Social Affairs and Health. The first course for work instructors consisted of distance learning and classroom teaching, and lasted from October 2001 to January 2002. Web-based solutions were also used. Occupational health and safety matters were especially stressed in this training.

Results/evaluation

Owing to the success of the first course, the Institute is planning to organise more courses along similar lines. According to the participants, the principles of on-the-job learning were

demonstrated clearly. OSH matters were taught successfully. The results show however that a lot needs to be done to integrate on-the-job learning into companies' everyday practices. Work experience as an education and training strategy is generally not familiar to companies. Providing work experience to students is not top on a company's list of priorities. It always demands somebody's time. This result contrasts a little with the survey made in May and June 2001 by the National Board of Education. According to that survey, 60 % of Finnish workplaces were willing to take on 'trainees', but this is not exactly the same as on-the-job learning. On-the-job learning is as much goal-oriented, guided and evaluated as school-based learning. The student should really learn at the workplace. It is an advanced form of the older 'trainee' model, and if a company is interested in retaining its workforce in the future, it will or should also be interested in hiring students for on-the-job learning. Our training of work instructors has played an important role in disseminating good practice in on-the-job learning. Moreover, we are confident that the fundamental aim of on-the-job learning in Finland as outlined in the law and the syllabus will be reached if we work for it together.

Karl-Heinz Grütte

Ministerium für Arbeit, Soziales, Gesundheit und Frauen des Landes Brandenburg
and Dr Georg Scamoni, Landwirtschaftliche Berufsgenossenschaft, Berlin, Germany

Title: Improved integration of OSH into vocational education in German agriculture

Introduction and aim

In connection with the 'European safety campaign in the field of agriculture 1999' the health and safety authority 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. The agricultural sector is the sector with the highest rate of accident risk in Germany.

The activities

Some 60 % of farming companies was assessed. The activities were set up to be as practical as possible and mechanical experts came along to give advice to teachers. From this, advanced training for teachers in vocational schools was organised. This resulted in a very high participation rate.

In a preparatory meeting, the following question was addressed: 'Why is an advanced training course for teachers in vocational school necessary?' This included issues like: 'Are there deficiencies in teaching OSH? Is OSH on the curriculum? What is the OSH situation like in vocational schools?'

The results

- The teachers had a poor or outdated knowledge of OSH, for example they were not aware of Directive 89/391/EEC and the corresponding German legal Act on Worker Protection.
- OSH was not taught specifically.
- No up-to-date teaching materials were available.

Opinions

- Teachers themselves requested technical support, to gain more expertise in OSH.
- Trainees needed technical and vocational OSH skills — machinery can cost a lot of money and proper skills are therefore needed to operate them.
- Both ministries responsible for vocational education in agriculture supported the project.

Future plans

- Providing lectures for advanced OSH training of teachers.
- Putting lectures into a manual as a reference document.

Project

A group of six OSH experts picked the topics. To get long-term effects their lectures were documented and summarised in a manual. The manual is 100 pages long and contains 120 overhead transparencies. With a grant from the European Commission, the manual could be published and distributed to interested persons. The second edition was published as a CD-ROM, and developed with the help of students.

Topics in the manual

- An overview of basic elements of European and German OSH law and systems
- Legal protection for young people, pregnant mothers, and mothers of very young children
- Working time
- Animal husbandry problems
- Problems of servicing machines (e.g. repairs in the middle of the field)
- Use of hazardous chemical agents in agriculture
- Typical health risks and diseases in agriculture and possibilities of prevention
- Safe work in workshops
- Construction work in agriculture
- Use of personal protective equipment

Evaluation/conclusions

1. A more systematic approach to including OSH in curricula is needed.
3. Curricula should be revised in relation to OSH and have OSH materials; experts should assist in this.
4. OSH lectures at school should focus on practice in addition to theory.
5. OSH experts make excellent OSH teachers. However, students must still visit the workplace and get a first-hand experience of seeing people at work.
6. OSH is a factor of productivity. This fact has to be implemented into vocational education and the public conscience (i.e. employees are part of the company's resources).
7. OSH expertise has to be taught as soon as possible.

Sergio Perticaroli, Mauro Pellicci
National Institute for Safety and Health at Work (ISPESL) Information, Documentation
and Training Department, Italy

Title: Integrating OSH in the curricula of technical and vocational institutes

ISPESL (the national reference institute on OSH topics) in cooperation with ISFOL (National Reference Institute on Vocational Training) carried out nationwide reviews and appraisals on OSH topics within the curricula of 'technical/vocational institutes' in the areas of 'building', 'electro-electronics' and 'mechanics'.

Objectives

The objectives of the research were the following:

- national-level analysis and evaluation of training curricula concerning OSH topics used in the Italian education system;
- the creation of records on the assessed curricula;
- the design and creation of credit transfer training units (CTTUs) according to the provisions, implementing the framework directive in the training areas covered by the research;
- the experimentation of curricular prototypes (modules) on target user-groups and verification of the efficiency and effectiveness of the teaching-learning process.

The sample investigated included 159 technical institutes and 154 vocational training centres in the 'building', 'electro-electronics' and 'mechanics' sectors.

The results of the investigation, based on a data survey questionnaire, showed:

- (i) the presence of these topics at a general education level;
- (iii) the training programmes under review did not conform to the requirements of the framework directive;
- (iv) a general failure to place OSH topics in specific modules;
- (v) a request for specific teaching aids;
- (vi) the need for teachers' courses and on-the-job training.

To remedy these shortcomings and bring the national training programmes into line with provisions implementing the framework directive and related directives, ISPESL in collaboration with ISFOL, began work on the planning, creation and testing of curricula in OSH.

The CTTUs structure, each lasting a total of 40 hours, consists of two parts: one focusing on basic skills (Module A), common to all three sectors, the other dedicated to technical-professional skills relevant to each sector under study (Module B: 'Building'; Module C: 'Electro-electronics'; Module D: 'Mechanics').

The following topics were addressed in module A:

- Introduction and aims of Legislative Decree 626/94
- Key safety figures, prevention and protection service, sanctions
- Worker information and training
- Workplaces
- Risk assessment (general aspects, guidelines)
- Work equipment, personal protective equipment, display screen equipment
- Manual handling of loads
- Fire prevention, evacuation, safety signs, first aid
- Simulation games
- Summary of the key points of Act 626/94

Regarding Module B, 10 teaching units were set up where active involvement of pupils through exercises and use of videos was important. Simulations of actual working conditions were carried out, during which pupils were asked to adopt concrete risk-prevention and protection measures.

A working group, together with teachers specialising in the field of OSH, tested Module A and assessed the results in terms of efficiency and effectiveness.

Analysis of data obtained from the experimentation of Module A on 14 classes and a total of 280 students showed:

- a good general level of learning (65% of students scored above average results);
- final test results in keeping with the level of teaching given;
- suitable methodology and tools, i.e. because they won the students' interest;
- production of supplementary training provisions not covered in standard curricula.

Carlo Veronesi
LHA Reggio Emilia: Prevention and Safety Service, Italy

Title: Accident prevention in the workplace week

Similar initiatives were undertaken at local level and special emphasis should be placed on the 'Prevention-school-work' projects and on the 'Accident prevention in the workplace week' (Reggio Emilia, 26 April - 1 May 1997), organised by the Reggio Emilia Local Health Authority and the Reggio Emilia Local Education Authority, given the high degree of involvement shown by teaching staff, non-teaching staff, students and citizens. All of the region's schools were involved (25 training and technical colleges, with 2 220 workers and 13 560 students; 41 lower secondary schools, with 2 108 workers and 11 445 students; 32 primary schools, with 2 110 workers and 15 296 students).

The first phase of the project involved 'training sessions' for OSH trainers (370 teachers), who in turn provided training for other teaching and non-teaching staff in their schools. These people then endeavoured to promote among their students a culture of occupational safety and health. The students then attempted to transmit OSH values to all citizens through a number of initiatives, for example plays, short films, exhibitions, fashion shows, video games, and street displays. Students went to museums and cinemas, for example, to present their work: 25 projects created by the students themselves, based on the idea of 'doing' rather than 'listening'.

Initiatives

Throughout the province, squares, theatres, and meeting rooms were used for active communication between schools, teachers and students on the one hand, and the city and the business community on the other. Serious, ironic or provocative ideas and projects were developed, set up and managed by students and teachers:

Installations

- Flowers at work
Floral messages on the topic of prevention in the city's central gardens (renamed 'Accident prevention square'), giving the event's logo and name.
- Prevention on the building site
Simulation of work performed on scaffolding installed in the centre of the square and endowed with all necessary safety features, with students wearing personal protection devices.

Performance

- Safety on the farm
Tractors, mowers, chainsaws, etc. and recommendations for their safe use.
- A tram called 626
A city bus used for publicity (in the two months leading up to the event) and as a vehicle for transporting students during the week, for interviews with workers and employers on organisational methods for enforcing Act 626 (in city and districts of the province).

Exhibitions

- Multimedia display of the best entries in the photography and logo competitions, models for the maze, models for the fashion show, the reworking of paintings with drawings, video animation, video games and web pages

Display of the best drawings from the primary school contest.

Estimated number of visitors from guest register and number of classes present: 2 000.

- Art and work
Display of artists' reproductions of work scenes, reworked in a creative manner by students using painting techniques and video animations.

Video games

- Safe market — forbidden risks
Two interactive games, with computer simulations on the topic of occupational safety and hygiene.

Publications

- Stories and memories
Work risks seen via literature, history, law and pedagogy.
Literary and historical researches. Anthology of texts from Italian and foreign literature dealing with risks in the workplace.
- 626: welcome to work... in safety
Pamphlets on occupational safety and health and new legislation, translated into French, English, German and Arabic by students.
- At school and at work in safety
Handbook containing a summary of Act 626 rewritten by students to be used at the beginning of each school year to welcome first-year students.

Audiovisuals

- Out of danger
Knowledge and observance of elementary prevention and conduct rules form the basis for the safety of persons entering a mechanical workshop.
- $C_6H_2O_6$ — the safety formula
The main hygiene and safety rules for those starting work in a chemistry laboratory.
- Alternating current: continuous safety
The main safety rules for those starting work in an electrical engineering laboratory (automation, systems, electrical measurements).

Project results

- Greater awareness: training, pursuant to Act 626/94, of all schools' teaching and non-teaching staff in the Province of Reggio Emilia.
- Public visibility for the initiative: involvement of citizens from the whole province as spectators.
- Enabled students to express their creativity in what is a difficult topic, presenting their projects to schools, parents, workers and citizens as a whole.

- Demonstration of the validity of active learning as an educational method and of the possibility of including the topics of occupational safety and health in conventional school curricula.

The future of the project 'Prevention at school and at work'

It is difficult to repeat an event such as the one described, but it left a mark on schools and has helped to pave for the way for new awareness-raising projects.

Everything was done in the hope that the initiative will not remain a one-off experience but can be repeated by others elsewhere, and that youngsters and the city will retain an interest in the question of prevention in the workplace.

Ángel Millanes
Ministry of Education, Culture and Sport, Spain

Title: Integrating OSH in technical and vocational education in Spain

Introduction

Aim of the initiative: our pupils should obtain the proper knowledge and awareness regarding safety and health on the job, before entering the world of work. To demonstrate that, they have to obtain the necessary diplomas certified by the MECED (Ministry of Education, Culture and Sport) for specific vocational training. The Ministry has not tried to add aspects to training related to OSH at work, but has incorporated it into the training. There are three terms in the manufacturing sector that are important: productivity, quality and safety. Total quality means safe work (not the three apart).

Methodology

In all training courses, there is a vocational module with general and basic contents. In these modules, particular emphasis is placed on concepts and attitudes relating to safety and health on the job. The aim is not only to provide knowledge, but also behaviour has to be expected from our students with the goal of minimising the risk factors.

There are also more specific modules (for sectors or sub-sectors) going more deeply into safety and health procedures. These courses involve for example agriculture and risk prevention or production of ceramics and industrial hygiene.

Results and conclusions

Outcome so far: pupils have acquired an outline knowledge as well as adequate behaviour in relation to safety and health, this includes:

- prevention policy;
- safety risks;
- industrial hygiene (biological, chemical and physical risks);
- prevention of risks related to work organisation and work load;
- emergencies.

How does the initiative fit into a national or regional strategy on integrating OSH into education?

Among other things, pupils need to demonstrate the benefits of introducing OSH into the company's production system, not as an optional add-on.

Is the initiative part of a campaign at a national or regional level?

The initiative is not part of any campaign, but is a permanent and priority goal in the specific vocational training. It is not a single action.

There are also legal references: 'students shall acquire necessary skills'. The initiative is derived from the Constitutional Act 1/1190 of 3 October, governing the education system or 'LOGSE' as well as the Royal Decree 676/1993 of 7 May, laying down general guidelines on vocational training diplomas and respective minimum schooling requirements. As a result of Act 35/1995 on the prevention of labour risks, the MECED (Ministry of Education, Culture and Sport) is seeking 'to encourage a real preventive culture through promoting educational improvement in all education levels on this matter'.

Other projects

Austria: the 'Kids project' took place in Austria in 2000 with the aim that every pupil should have at least one contact with a labour inspector before starting work. Through exhibitions and the provision of expert guest speakers at courses, OSH issues were presented in classes to concentrate on the positive aspects of OSH issues.

Presentations of OSH issues were given in the classroom by labour inspectors with the aim of creating positive impressions of OSH issues. With OSH, contact with real people is more important than regulations etc. Targeting young people is critical.

Sweden: a programme has been set up for children to elect safety representatives in schools. Sixty hours of OSH training are given in the secondary school for three years. The problem is that the relevant authorities do not award any points for these courses. They are currently trying to get the courses designed so that students get credits from the authorities and can graduate with these courses.

DISCUSSION

The audience asked questions, and speakers and others responded.

What about experiences of training teachers and trainee teachers?

Often employment ministries will have no competency with regard to teaching issues, so it can be difficult. Cooperation should be sought between authorities to help ensure teachers are trained appropriately in OSH

It is important to make OSH a permanent feature of education, rather than a one-off activity.

KEY FINDINGS

From discussion, the following findings emerged for 'OSH and adults — technical and vocational education':

- OSH training needs to be practical and involve on-the-job training and experience.
- OSH training also needs to look at issues like risk assessment and risk management, as well as the practical elements.
- We need to assess what has been learned, rather than simply convey information.
- OSH should be something familiar and this could be achieved through for example the Austrian 'Kids project'. This ensures that all school children meet an inspector and understand their role.

OSH & ADULTS — UNIVERSITY EDUCATION

Pedro Mondelo

Centre d'Ergonomia I Prevencio Universitat Politecnica de Catalunya, Spain

Title: Integrating OSH at university level

A model for a university system was presented, involving three universities (Barcelona University, Pompeu Fabra University, and the Technical University of Catalonia), and the National Institute for Occupational Safety and Hygiene (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.

Introduction and aim

The Spanish education system is very similar to the systems of other countries, especially at university level. The following model is used: Bachelor Degree (three years) and Masters Degree (two years). Characteristic to any university system is that a certain level of attainment has to be reached. A specific objective is to include knowledge that is essential for correctly dealing with occupational risks.

It is important to note that students arriving at university have already reached a certain level of attainment but this can vary greatly from one student to another.

Programme

Each year has two semesters: so this provides four semesters of training during which credits have to be obtained. We start with 'safety', 'hygiene', 'ergonomics', 'psychosociology', and 'health surveillance'. These are the most important subject areas according to the Spanish Act, although it considers 'ergonomics' and 'psychosociology' as one subject.

There are two types of subjects:

1. Mandatory subjects: all of these must be passed for the student to be admitted onto the Masters Degree on prevention of OSH risk. These subjects are based on Masters Degrees in other countries.
2. Optional subjects.

The degree is based on a system of credits (10 hours each) earned in four semesters (two years).

The mandatory subjects are:

- Social science (3 credits)
- Natural science (3 credits)
- Health and safety law (4.5 credits)
- Occupational risk prevention (3 credits)
- Psychosociology (9 credits)

- Occupational safety (9 credits)
- Labour relationships (4.5 credits)
- Biological basis of prevention (4.5 credits)
- Occupational epidemiology (6 credits)
- Ergonomics (9 credits)
- Industrial hygiene (9 credits)
- Occupational medicine (6 credits)
- Economics of organisations (6 credits)
- Prevention audits (4.5 credits)
- Risk management (6 credits)
- Practical (15 credits)
- Training and communication (6 credits)
- Work organisation (6 credits)
- Environmental management (4.5 credits)
- Prevention management (6 credits)
- Economical and financial analysis of organisations (6 credits)

The second type is optional subjects of 9 credits each, and develops knowledge on four key areas (i.e. Industrial hygiene II, Psychosociology II, Ergonomics II and Occupational safety II).

Results

This year is the first year of the programme. There is further work going on to establish an MBA aimed at prevention managers working in international companies.

Chris Taylor
Health Services Unit, Health and Safety Executive, UK

Title: Tomorrow's doctors — putting occupational health & safety on the undergraduate medical syllabus

Background and national strategy

The Health and Safety Commission (HSC) in Great Britain has a programme to include the teaching of accident risk in compulsory, further and higher education throughout England, Scotland and Wales. Vocational courses that provide entry to professions where safety is critical are particular targets. 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 position to influence, other healthcare staff exposed to the same risks. They generally receive no training in occupational health and safety.

Objectives

The HSC's Health Services Advisory Committee (HSAC) has 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 safety and health during their undergraduate training. Therefore, they wanted to persuade the General Medical Council (GMC) — which regulates the professional conduct of doctors, as well as undergraduate and postgraduate education — that OSH awareness should be a part of undergraduate medical training. Furthermore, they wanted to produce guidance on what OSH topics should be included in the undergraduate medical syllabus.

By involving occupational health physicians and safety managers working in the medical schools, we became aware of the competing demands on the undergraduate syllabus (and that any references to OSH in the GMC guidance would have to be short), and that the medical schools would not accept a prescriptive approach but could welcome outcome-based guidance.

Programme

Preparation

- Find some sympathetic doctors, for example occupational health physicians and safety managers from medical schools.
- Find good practice examples, for example the University of Wales organised 'professional development' days.

Timing

The timing was good since the GMC were planning to revise 'Tomorrow's doctor' in 2001.

Furthermore, the government initiative on clinical risk management (patient safety) created a good opportunity, and could be developed to influence occupational risk management. And generally, there was concern among young doctors about occupational risks (e.g. stress,

hepatitis). However, while 95 % of nurses know and follow procedure on occupational risks, less than 50 % of doctors do.

Tactics

Contact had to be made with the Heads of Medical Schools first, to agree on the approach and to avoid problems or hostility from the outset. Then contact was made with the GMC Education Committee, involving the sympathetic doctors from the medical schools.

Progress 2001

There was an agreement by the GMC to add OSH objectives to 'Tomorrow's doctor'. A joint working group between HSAC and the Council for Medical Schools was set up to draft objectives for GMC and to outline the guidance for medical schools.

Progress 2002

The latest draft of 'Tomorrow's doctor' was produced in January 2002.

Next steps

The rough guidance is there; what more needs to be done?

- agreeing the final changes with the GMC;
- developing the detailed guidance for Medical Schools (e.g. what are the common health risks?);
- monitoring implementation;
- looking into postgraduate training.

Conclusions

There are significant demands on undergraduate time and there is already a lot of pressure, so the programme must be limited to certain key aspects. The timing is critical: it can take a long time to achieve changes in the syllabus. The profession has to be ready to accept changes, and the mood has to be right. But, ultimately, it must be said, it can be done.

DISCUSSION

The following comments were made and questions were asked, and speakers and others responded.

Comment: including OSH in doctor training should also enable them to better identify and diagnose OSH-related problems in patients as well as ensuring their own and colleagues' health and safety.

Are there other countries that also have initiatives on university education?

Some research was carried out in the UK on undergraduate courses on the subject of construction and found that the academic institutions do not consider health and safety to be

an academic subject, and so not much time is spent on it. Furthermore, they do not have the competence themselves. So there is work to establish a strategy to overcome this, in conjunction with the social partners and professional and educational organisations.

Hans-Horst Konkolewsky: The Agency had problems in finding relevant cases of OSH integration at the university level. The Danish Technical University also carried out work in this area. We see then that there is a big gap here and we should work further on this because these people design the workplace in which people are working. This would help to reduce potential problems in the future.

Comment: participation rates in higher education are increasing across Europe, so this is an important issue for the future. Where is the value in spending effort on primary and secondary levels and then stopping it at higher levels?

KEY FINDINGS

From discussion, the following findings emerged for 'OSH and adults — university education':

- Shortage of European examples: it is more difficult to get OSH into professional and higher education curricula than any others and to persuade relevant bodies.
- Resistance may be based on:
 - a perception that 'risk' is not an academic concept;
 - lack of competence to teach it.
- Success may depend on getting sympathetic academics and professionals to assist.
- Professionals are a growing part of the workforce and are responsible for others' safety, not just their own.

ADDITIONAL CONCLUSIONS FOR PART 1

Integration of occupational safety and health in the curricula

General conclusions

- OSH is a crucial element of training for specific employment, not an add-on or a one-off 'campaign';
- Teachers and trainers need to be trained as well, as they may have little experience of the wider world of work. It is not enough to simply hand over tools. There are a lot of risk issues in the teaching area that very few teachers are aware of.

Areas for future consideration

Risks in education for example using equipment, manual handling such as school bags, pupil stress and bullying between children.

- More focus on health issues, in addition to risks to safety.

PART 2

Other ways of integrating OSH in education and training

Integrating the OSH system into education

Alf Nielsen
Sector Working Environment Council for Teaching and Research, Denmark

Title: New act on the teaching environment for school children and students

Introduction

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

- all students have a right to a good working environment in their school;
- teaching should take place without creating any 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;
- a reasonable physical, psychological and aesthetic environment should be maintained.

The new act was partly based on experience from an initiative carried out at regional level (City of Roskilde) in primary and secondary schools. The initiative motivated many Danish schools to follow this lead. This process has been consolidated by the new act.

Aims of the initiative in Roskilde:

- To improve the quality of the working environment for the students.
- To learn about possible risks linked to the teaching situation (working with machines).
- To be aware of changes to the body (e.g. head and backaches).
- To learn about correct working postures and lighting.
- To be aware of problems (what causes problems, how they can be solved).
- To ensure good mental health.
- To learn how to report occupational accidents and diseases.
- To prepare the teenagers to meet the working environment outside the schools.

Programme

The pupils learnt how to carry out a risk assessment using a template, based on positive aspects:

- Focus on good and positive things at school.
- What gives energy and makes pupils feel good?
- What encourages pupils to go to work/school?

This means that psychosocial aspects are also involved. Furthermore, there needs to be a mechanism for notifying a safety or work environment problem (e.g. via a students' safety organisation). The students' safety representative reports the safety/work-environment problem in the school.

There are four types of participants needed to work together: pupils, teachers, social workers, and technical/administrative employees.

Outcome in Roskilde

- A safety organisation was established for staff and headmasters were taught how to involve the pupils' elected representatives.
- Good standards were developed for the work and guidance material for teachers and their counsellors. The pupils participated in assessing the teaching environment.

Furthermore, in addition to the new act, a new national centre has recently opened: the Danish Centre of the Teaching Environment (www.undervisningsmiljoe.dk).

Jutta Busch
Bundesverband der Unfallkassen (BUK), Germany

Title: Learning about OSH: statutory accident insurance for children in kindergartens, schoolchildren and students in Germany

Introduction and aims

The law on statutory accident insurance in Germany was expanded in 1971 and 1997 (to include children in crèches, kindergartens, day nurseries, schools and students in universities). Today 17.5 million young people are covered by the statutory accident insurance scheme. In the event of an accident, they receive the same benefits (compensation and rehabilitation) as every worker or employee. Moreover, the statutory accident insurance funds have to deal with health, safety and effective first aid in schools by all suitable measures. 'Suitable measures' are for example regulations, guidelines, safety rules, information, media and teacher training. The choice of measures depends more or less on statistical data and research. To reach the aim of a safe and healthy school life, the insurance funds have to inform, advise and award certificates to school prevention officers.

What is covered by the statutory accident insurance system?

- Participation at lessons
- Recreation
- Other school events (sport competitions, school trips, etc.)
- Vocational courses
- The journey to and from school

Benefits

- Optimal medical treatment
- Occupational and social rehabilitation
- Pensions
- Compensation in the event of death

The school curricula are developed separately in the different 16 *Bundesländer* (federal states). The BUK (¹)regularly keeps in contact with the national Ministry of Education. Its members advise the Federal State Ministries of Education on OSH subjects. They seek to implement regulations, concepts and concrete projects to improve health and safety in schools. The following teachers' aids are available: magazines, brochures, folders, safety rules, information and films.

⁽¹⁾ Umbrella organisation for statutory public service accident insurance, which includes nurseries, schools, universities and other educational public institutions, called *Unfallkassen* or *Gemeindeunfallversicherungsverbände*.

It is important to stress that a school is not a company. It is more a way of life, one that focuses on learning. The influence of school is very important at that age (sometimes even more important than the parents' influence). Therefore, practical instruments are provided, as well as tools and sports education (with the message: 'do more sport, focusing less on competition and more on doing the right exercises').

Conclusions

This initiative is based on law; it applies the statutory accident insurance scheme to pupils' and teachers' health and safety. BUK is obliged to take care of the pupils' and teachers' safety. BUK and its members have the right to enact regulations concerning OSH.

DISCUSSION

Questions from the audience are followed by speakers' and others' responses.

How did you deal with the government?

Sometimes, it helps to start locally and then to develop from this base to other communities etc; this can be helpful in securing financing.

How do you get people to take on responsibility?

Again, starting small helps to ensure people get involved and that students are interested.

We heard at the beginning of the day that parents should be involved. How is this done in these projects?

Parents are interested if the children talk about the problems, they listen and do something about it. Parents can also sit on the project board and can hear their children's views.

Parents are important. The parents' association has a meeting every year to promote OSH and to provide a link with home life. There are many contacts with the teachers and a magazine will be published.

Was there some sort of incentive or financial benefit from the insurance company to the schools when something good was achieved?

There can be contests where awards are given to the most interesting work.

Students are covered by the same insurance as in the workplace. Is it safer to be at school than at work?

It is difficult to compare as the information on sickness absenteeism is not always available from schools.

Introducing OSH in education via campaigns and structural programmes

Ernst-Friedrich Pernack
Ministerium für Arbeit, Soziales, Gesundheit und Frauen
des Landes Brandenburg, Germany

Title: Integrating OSH into vocational education in the federal state of Brandenburg; use of a campaign

Background and description of problem

In Brandenburg, those about to become apprentices complained about a number of problems related to vocational training; there is high unemployment (only half of the trainees will be employed) and few apprenticeships are available. This leads to the fact that adolescents cannot often be trained into their chosen occupation.

From a study of the Craft-Guild Health Insurance (2 300 trainees interviewed), it was clear that the demands of the job, stress and strain were too much, for example:

- 33 % of the trainees wanted more information about the occupational hazards and health risks in their job;
- the main stresses are: time pressure, stress and too many demands (39 %); long working hours (33 %); monotony (31 %); physical load and environmental factors (30 %);

The report of the Ministry of Health, Women, Labour and Social Affairs on the social situation and the health of young people in the federal state of Brandenburg, reveals that health as well as motivational factors are reflected in the sickness rate. This rate of ill health among trainees is 7.2 % in Brandenburg compared with 4.3 % in the whole of Germany. Furthermore, another difference from the federal level is the higher sickness rate of trainees, compared to employees as a whole.

Campaign

Because of the problems set out above, a campaign 'Health and vocational training' was established. The aims of this initiative are:

- to integrate new concepts into the structure of vocational training;
- to make the trainees aware of occupational safety and health, and healthcare;
- to cooperate with other partners in this field.

A working group 'Work and health' was established in the Ministry of Health, Women, Labour and Social Affairs, to take the initiative forward.

The aims of the working group were to:

- exchange information and experiences;
- arrange cooperation;

- analyse the situation;
- propose necessary measures.

The members of the working group were representatives from:

- both sides of industry;
- health and accident insurers;
- universities and technical colleges;
- OSH and health administrations.

A number of projects made up the 'Health and vocational training' initiative, for example:

- analysis of the teaching of OSH topics in vocational schools by the OSH administration in federal state of Brandenburg;
- 'Youths will live safely' competition between schools for good ideas to improve OSH;
- campaign 'Healthy start into the craft' of the chambers of commerce for craft trades and their health insurers;
- OSH days held by a trades union in vocational schools;
- seminars held by several accident insurers.

Some more details were given on the analysis of teaching of OSH topics project by the OSH administration in the federal state of Brandenburg. It involved several steps, starting with a status survey. Before proposing recommendations for action, it was necessary to carry out a baseline survey of the knowledge conveyed through teaching at the vocational school, of the methodology of knowledge transfer and knowledge from teachers and future apprentices. Questionnaires were sent to 650 vocational training teachers and 5 800 trainees from 9 of the 27 vocational schools in the federal state of Brandenburg. Questions on knowledge, teaching methods, experiences and career choices relating to OSH were asked (different questionnaires for headmasters, teachers and trainees).

Results of the survey

The results show that there were deficiencies in the OSH knowledge of teachers and trainees, and limitations in the way in which OSH is taught. Furthermore, it was found that there needs to be improvements in OSH qualifications and training of teachers, and teaching methods must be checked for their effectiveness.

Preventing accidents and ill health remains the focus of attention, whereas the aim of OSH teaching should be to develop from the identification and elimination of risks to the ability of an individual to manage their own health and safety. Ergonomic design and psychological stress were barely touched upon. The methods and contents of vocational education must be adopted to new demands.

Way forward

Now the baseline has been established through the survey, the results need to be taken forward. Therefore, a workshop will be carried out in the summer of 2002 to develop recommendations for action with representatives of employers, employees, the Ministry of Labour, Ministry of Health, Ministry of Education, vocational schools and teacher-training

institutes. More information can be found on the web site: <http://bb.osha.de>. The next steps will include designing teaching modules for teacher training and for special lessons on OSH topics. The integration of OSH topics will be improved for the regular training programmes — curricula, examinations, etc. An advisory service will be made available for vocational schools and enterprises.

João Saltão

IDICT (Instituto de Desenvolvimento e Inspeção das Condições de Trabalho), Portugal

Title: National programme of education for safety and health at work

Background and aims

There is a legal framework in the national programme according to the European directive (89/391/EEC) and the subsequent Portuguese law of 1991 (441/91 of 14/11). In Chapter 4, it states: 'Integration of contents of OSH into educational curricula should be assured in several levels, which the aim of adopting a prevention culture in life, agreeing with the education system and the occupational risk-prevention programmes'.

Social policies and strategic agreements (1996–99 and 2001) have been developed between the government and social partners. The following elements of social instruments and policies are considered relevant:

- OSH should be integrated into the school curriculum at all levels of education, in order to foster a preventive culture among the future workforce (Act 441/91, 14 November — OSH regulation);
- the government and the social partners consider the development of actions allowing a sustained improvement in OSH conditions to be a priority and have therefore agreed to a progressive inclusion of OSH in school curricula and professional training courses (1996/1999);
- education and training courses are to include OSH matters (123/97, 7 July 1997).

The government and social partners considered as a priority to develop measures to improve work conditions such as the integration of OSH content in general and technical education curricula, including teacher training in these subjects. This led to the development of a national programme of prevention support — PNAP.

The absence of prevention education in the education system was seen to constitute one of the causes of the high figures on work accidents (370 000 work accidents per year, of which 400 are fatal). This is particularly relevant to young people who have just started work (people under 24 years account for 22 % of accidents at work). According to the numbers available from the Statistical Department of the Labour Ministry, high-risk sectors such as construction, engineering and agriculture, have seen a significantly higher number of work accidents, especially among young workers with a low level of qualifications. This suggested a need for a better preparation for these workers in OSH, so that they acquire technical information, behaviour and attitudes for prevention in general and for risk prevention, which they will find in the course of their activities. This is why a national programme was seen to be necessary: to reduce the number of accidents and to promote closer relationships between school and work. IDICT is developing some initiatives in partnership with the Education Ministry, with medium- to long-term aims. These include actions in the school environment to help develop a more general culture of prevention, applicable to work and home life.

The national programme

IDICT and the Education Ministry are implementing a national OSH education programme (PNESST), based around three action lines:

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

The second action line involves preparing 'training programmes' for several levels of education, as well as the teaching resources necessary to do this. It is more difficult to make headway in universities with teaching autonomy as they develop their curricula on an individual basis. In primary and secondary schools, teachers can be more readily trained to integrate OSH principles. The training started in 2000 with 500 teachers. There is also distance learning via the Internet, organised with the social partners, the schools and the national school network. Eight universities provide distance-learning packages.

The third action line comprises developing educational communities (schools, training companies and other organisations) and introducing young people into working life (towards 'citizenship'). It was based on an understanding that prevention depends upon developing an active culture of prevention among citizens, both at work and at home. This presupposed an adoption by the public authorities of a policy that promotes the different approaches to prevention culture at the education system level.

This national programme has an image and a 'logo', concerning its theme 'Safety and health at work: learn today — practise forever'.

In the development of this national programme, experience was shared with organisations in other European countries for example the education ministry and INRS in France.

The aim is to encourage a safe lifestyle among workers, from an early age.

In the new paradigm of work organisation, the improvement of living and working conditions is seen to a large extent to depend on fostering a culture of prevention among the workforce, through education and training.

DISCUSSION

Questions from the audience are followed by speakers' and others' responses.

Are these innovative methods working in practice? If not, what is needed to make them work?

It is important that these methods be a source of practical help. They should not be regarded as additional burdens but rather a means of support. This idea has to be sold to teachers otherwise it will not be accepted.

There are efforts to educate children throughout their school life, which is a long-term process. In the short term, the level of knowledge rises, but to see real changes come about takes some time. If we want to know the long-term effects, we need to evaluate them.

CONCLUSIONS FOR PART 2

Other ways of integrating occupational safety and health in education and training

Integrating the OSH system into education

It is possible to use legislation to assist the integration of OSH into education. The two cases illustrate different ways of using law to integrate the 'OSH system' into education; by nominating pupils as safety representatives, by involving pupils in risk assessment and by including pupils in the statutory accident insurance system. These methods replicate the adult OSH system into children's learning environment.

Introducing OSH in education and training via campaigns and structural programmes

The examples illustrated how initiatives have been taken forward on a national and regional basis as campaigns and structural programmes. There is scope to introduce initiatives on integrating OSH into education at all levels, from national to local. There is also scope for international cooperation in the development of campaigns and structural programmes.

PART 3

Discussion of success factors and lessons learned

Additional contributions

Ireland: Two years ago, a resource for business studies teachers and students at secondary level was created. It contains practical examples of companies, which ensures the courses are not purely theoretical. This is available on the Internet: www.business2000.ie.

DISCUSSION

Are there any ideas on how to evaluate the initiatives on integrating OSH into education?

In Belgium, for a project involving a campaign, an evaluation was carried out using a checklist and a comparison was made on the number of accidents.

All projects tend to be different, so evaluation has to be on an individual basis. The evaluative process ideally needs academic rigour enabling successes and failures to be brought out.

Cooperation between employment systems and education systems is necessary. What experiences are there on this? What problems occur and how have they been overcome?

In France, there is cooperation between the ministry and the institutions on this issue. This has taken a while to establish, but the circumstances were right for positive action. Consideration was given as to the type of approach to be adopted. Lobbying needs to take place in order to secure achievements. In the 1990s, an agreement was concluded to teach OSH as one of the subjects in vocational education establishments.

In the UK, it has proved to be difficult, because of the number of departments and organisations which you have to work with or consult. Work is ongoing and there have been successes.

Do the insurance companies have a role by giving money to promote integration of OSH into education? For developing educational material, for example?

There is experience in Spain of a project that was financed through an insurance company. Funds were offered for research work during one year to develop teaching material. Working together with teachers, curricula were studied and it was identified how to integrate and develop tools, for teaching values and attitudes.

Through the Leonardo programme, could countries be brought together to discuss practical examples or guidance?

Some time ago, Germany worked with the Danish Service Centre. Finland was also involved in a Leonardo project on teaching vocational students how to carry out risk assessments. This included observations, recognising risks and obstacles, and finding solutions. It is still going on.

In Germany, a three-year project has just been completed involving the federal state of North-Rhine Westphalia, with Denmark, France, Italy and Spain.

One of the key questions at EU level is 'What funding is available, other than through the Leonardo programme?' It should be an interesting project to bring this information together. Another area to examine is 'what is the role of the EU and the Commission's new health and safety strategy?' We should be focusing not only on the requirements of governments on employers, but on the governments themselves to bring this into their educational programmes.

Hans-Horst Konkolewsky: This is a kick-off meeting on this. The administrative board agreed that 'mainstreaming OSH' should be a future topic and that further work should be done on this. So, this is the starting point of activities in the field. We need to consider the way forward. The Agency will develop a special web feature that will be presented on this topic in conjunction with the focal points.

Comment: the debate should consider what was agreed in the Luxembourg Advisory Committee. We need to look at two levels: health and safety education for all adults, as well as classical school education. There is a need to put a proper network in place, not just an information exchange. There is a need to learn from what has gone on before and design training and education programmes on a cost-effective basis. The debate needs to be moved on.

In France, there is experience of developing transnational teaching tools. But, usually, the tools stay in one country due to different training and education systems. The complexity of different systems needs to be taken into account when designing materials. Therefore, there needs to be a strategy in place, building on the principles of exchange and good practice.

Comment: transparency of OSH programmes is necessary. Each country is different, but it is important to facilitate application procedures to obtain greater mobility of people, free movement of workers and students and people undergoing training. So we have to go further than exchange of information, but we could also try to develop common strategies and modules so that the diplomas are comparable and people can work in other countries.

Comment: there are basic skill problems involving young people leaving full-time education without being able to read and write properly. There are people who cannot read safety documents like safety sheets. There may also be language problems for some people from ethnic minority groups.

It is known that people suffer from the risk of being excluded from work, due to a lack of basic skills. In a study on 19 countries regarding key skills, almost nothing has been said about OSH. Linking OSH to core concepts like employability and sustainability might be one way forward.

Why not set up a system of 'credits' for OSH training?

It would be important first to identify the core topics, and the key elements of the curriculum. Furthermore, before teaching OSH, safe environments in schools have to be created.

KEY FINDINGS

From discussion, the following findings emerged from 'Part 3: Identification and discussion of success factors and lessons learned'.

Observations of work at national level:

- there has to be collaboration between education ministries and labour inspectorates, but this can be very difficult due to the many layers in the organisations, local areas, etc.;
- it is important to include and engage all possible actors as part of learning a lifetime skill (local teachers, employers, workers, parents and pupils);
- OSH elements have to be integrated into appropriate parts of the curriculum and not just as a separate stand-alone subject.

What is available at European level?

- funding sources are available at European level, for example Leonardo;
- there are already a number of projects that have addressed OSH but:
 - they were one-off projects: there was no follow-up after the project finished;
 - several subjects were addressed, without coordination;
 - after the projects finished, there was little sharing of results.

What is needed at European level?

- a strategy for OSH in education is needed, including:
 - the definition of core competence, what should be included, what do they have to know?
 - if we want to share experiences or good practices, transferability of diplomas, points and credits is needed;
- an identification of all possible funding mechanisms is necessary to allow implementation at international, national and local level (existing possibilities include the European Social Fund, Leonardo, Socrates and Comenius);
- coordination across the European Union on, for example, development of common curricula, sharing of existing good practice tools, etc.;
- evaluation of tools and total impact.

The following success factors were identified from the national projects:

- Risk education and OSH need to be seen as a high priority; teaching these issues should start at the beginning of a child's education.
- 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 has to be collaboration between education and employment ministries and labour inspectorates and other 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 to 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.

Day 2

Learning about OSH: a strategy to develop preventive safety and health cultures?

Status and strategic outlook

Francisca Arbizu, Spain
National Institute of Qualifications, representing the Spanish Presidency

The context was set for Day 2. The following general points were made:

- Social partners and all Member States need to be included when addressing the promotion of OSH in training and education on a European level.

The key objective is to guarantee basic skills in OSH for future workers.

OSH must be introduced very early in education; skills must be integrated right from the beginning of education and based on the experiences and lives of the target group, but always relating to OSH. Furthermore, skills should be adapted in line with newly emerging occupational risks.

To reach this position, professionals need to be trained in the field of OSH, to take preventive actions, to promote OSH.

In creating a positive attitude towards integrating OSH aspects in education, we need to have safe and healthy environments where the training is delivered.

Some specific points were made on the European context:

- For the free movement of workers over Europe, OSH competencies should be considered. There should be a system based on credit transfer, with transparency and recognition of qualifications and skills. Many have the skills but these are not certificated. Therefore, we should evaluate and recognise the learning process and what has been achieved.
- Furthermore, there is a need to innovate the learning methods and materials, and define a solid training programme.
- To analyse and facilitate the process, it is necessary to integrate OSH into European programmes, for example Leonardo, so that European skills can be analysed and a solid training programme can be obtained. This means the provision of more funding and investing more money on OSH training.

Keynote speech

Jean-Luc Marié

Director-General, INRS and Chairman of ISSA Education and Training Section

In this contribution to the seminar, the following questions will be addressed:

1. Why should occupational safety and health (OSH) training be integrated into education?
2. How can the skills of prevention institutes be transferred to education systems?
3. How should our European and international organisations work together to facilitate this transfer?

By way of background, the partnership between the French social security system and the Ministry of National Education has operated an 'Occupational risk-prevention teaching' programme for about 10 years. The International Social Security Association's (ISSA) Education and Training Section brings together eight countries on this topic.

From simple rule-following to developing OSH competencies

In the 1990s, before our partnership was in place, an inter-ministerial taskforce assessed the 'Hygiene and safety at work' teaching programme in France. The taskforce recognised that this teaching programme had always existed in our education system. However, it often only involved very basic facts and 'sixty seconds on safety' before beginning practical work.

Towards new OSH skills in technical and vocational education

By working with the national education system to develop new OSH skills for young people, we are able to:

- refocus our activities within prevention to concentrate on our primary mission, i.e. assisting companies;
- develop our prevention actions through a new policy of transferring OSH competence and training.

'Making the management of occupational risks a specific element of professional competency'

The French partnership's slogan is 'making the management of occupational risks a specific element of professional competency'. This could be translated as 'it is no longer enough to protect young people, they must also be taught how to manage occupational risks'. This is a version of the Chinese proverb: 'If you give a fish to a hungry man, he will eat for a day. If you teach him how to fish, he will eat for the rest of his life.'

As a basic principle, working with OSH objectives is a professional skill just like technical knowledge. This skill must be taught and evaluated if it is to be recognised.

Young people: accidents, disaffection

In France, salaried workers under 25 years old represent only 12 % of the workforce but account for nearly 25 % of accidents — an accident rate twice as high as the national average. If the figures indicate an unwillingness among young people to work safely, other factors also play a part, such as an increase in precarious work and the difficulty young people have in identifying risks made more complex by technological and organisational developments in companies.

We need to recognise that the new generation no longer wishes to work in the same companies and under the same conditions as their parents. Disaffection among young people for certain occupations has revealed that work-related health has become an important factor for choosing their careers.

The transfer of competencies from prevention institutes to education systems

Some factors pointing to the need for new approaches to OSH in vocational education and training are related to technological change and accompanying changes in skills and risks; the high rate of accidents among young people and often new recruits; and their inability to recognise work-related risks. If we want to see real improvements in the training of our future workers, we need to see a transfer of competencies from prevention institutes to education systems.

The partnership in France for the teaching of occupational risk prevention

In France, thanks to the political will of two ministers, this movement of prevention towards education is under way. It is based on an 'agreement for life' at national level between the Ministry of National Education and social security.

To accompany this agreement, a genuine partnership between education and prevention bringing together human, technological, and financial resources is governed by the following principles:

1. Participation of prevention officers in committees of the national education authority, which create and update vocational education syllabi.
2. Training teacher trainers: the first stage in transferring our prevention knowledge and often the first time that teachers are aware of the need to teach OSH.
3. Making available specific teaching materials created by joint working groups of teachers and prevention officers.
4. Developing new ways of teaching: giving students an active role in learning their profession and risk-management objectives is not achieved without shaking up a few teaching traditions. Transferring skills is not enough! A genuine system of prevention teaching tailored to this audience must be developed.

Audience

In France, our target audience is pupils, students and apprentices studying for a certificate of direct entry into the world of work, (European qualification at levels I, II & III), involving jobs for operators, technicians and senior technicians. We have recently developed a strategy for higher education and engineering schools.

The contractual framework and coordinating the partnership

Of course, there can be no real partnership without a contractual framework. Our national level agreement is linked to regional agreements that associate each *académie* (the local divisions of the national education authority) with each regional unit of the social security system.

The partnership has two levels of coordination:

- A national council: a flexible body that draws up national guidelines and evaluates actions. It issues an annual report.
- At regional level, mixed steering committees, together with the national council, organise and evaluate training actions for teachers and students.

Integration, knowledge transfer, teaching methods and resources

1. Integrating OSH skills into curricula

To enable OSH skills to be integrated into qualifications, prevention officers need to work on getting these skills into the relevant curricula.

2. Transferring knowledge

INRS staff provide the training for the teacher trainers. These trainers in turn train teachers in the academic organisation of training, in collaboration with the local representations of the social security system. At the end of this training, the teachers are responsible for training their students in prevention.

3. Producing teaching resources

Producing teaching resources is a major investment in the integration of prevention in teaching. Tools are issued free of charge to teachers via the regional social security organisations. The INRS series: 'Teaching the prevention of occupational risks' currently contains about 50 titles.

4. New teaching methods

Prevention has made use of the so-called 'new technologies' for several years now.

Seven resource networks of the national education authority provide assistance and innovation in teaching. The coordinators of these networks are our links between prevention officers and teachers.

Widened scope

The national council periodically renews our partnership agreements. For the coming years, it has widened its scope in four areas.

1. The initial training of teachers

In the near future, more than a third of vocational and technical education teachers will be retiring. Efforts will be concentrated on the initial training of teachers. Improved coordination between initial and ongoing training will enable teachers to update their prevention knowledge throughout their careers.

2. Apprenticeships

Today, 80 % of students in technical training are in traditional school-based education. The remaining 20 % learn through apprenticeships including block-release training. An initiative involving these types of apprenticeships will be undertaken.

3. The tertiary sector

We traditionally associate occupational accidents or ill health with industrial or building jobs. But, many jobs in the tertiary sector (hotel and catering, transport and logistics) have comparable figures for occupational accidents and diseases.

4. European and international partnerships

Exchanging experiences with neighbouring countries and internationally.

ISSA Education and Training Section

The ISSA's Education and Training Section provides the main focus for this exchange. Eight countries (Spain, Germany, the UK, United States, Switzerland, Portugal, France and Canada) have been cooperating for several years to achieve international recognition of the skill to 'manage occupational risks'. Representation of these countries is based on the principle that education-prevention experts attend.

Observations

The committee's work shows great diversity within national organisations, for example:

- Prevention is the responsibility of the public system (Ministry of Employment) and/or of the social security system.
- Relationships between prevention and education depend on the historical, cultural and institutional context of each country.

But, each country is committed to developing partnerships for training young people.

Common principles

Nevertheless, we have four common principles to develop our national strategies:

- the need to integrate OSH skills into curricula;

- the contribution of specific OSH training to a global culture of prevention;
- the transfer of knowledge and know-how from prevention officers to teachers;
- the investment of prevention institutes in teaching so that they have an impact on future employees.

First international seminar (Strasbourg, 26 and 27 November 2001)

Last November, the ISSA's Education and Training Section organised its first international seminar at the Council of Europe, Strasbourg. Almost 200 participants from 19 countries attended. This event pooled the experiences of 16 organisations and institutions involved in training young people in the prevention of occupational risks. That seminar was the starting point at international level for the recognition of OSH as a new professional skill in vocational education and training.

Perspectives

The Education and Training Section is leading two initiatives:

- creation of an OSH training charter, to define the different levels of training demand for vocational qualifications aimed at young people;
- drafting harmonised training programmes and their various means of validation, in particular the validation of occupational skills.

This work will be discussed at the ISSA-ILO World Congress in Vienna, from 26 to 31 May 2002, and later presented to an international colloquium in October 2003 in Quebec.

Conclusion

I would like to congratulate the Agency and the Spanish Presidency for their initiative, which places the training of future workers among its priorities. I am convinced that cooperation between ISSA and the Agency will provide fresh impetus for training and educating young people on OSH and enable us to offer our experiences to the candidate countries.

Roundtable discussion

Bernhard Jansen

Title: Mainstreaming OSH into education and training systems — an important component for developing a risk-prevention culture.

I will not attempt to bring together everything that has been said throughout the very rich debate we have had during the last day and a half. As Horst Konkolewsky said yesterday, by its own nature, this event is a starting point for the debate, not its conclusion.

In my statement, I will concentrate on the possible European contribution to this important discussion. As you all know, the European Commission is currently about to adopt a new European strategy on health and safety in the workplace for the years 2002 to 2006. This new strategy fully fits into the Lisbon conclusions improving the quality of employment in a knowledge-based economy.

I would like to start by setting the background to the seminar at the EU level.

I believe it is important to recall that, in terms of education policy, Member States are fully responsible for the content and organisation of their own education and training systems, and it is not for the EU to harmonise laws and regulations in this area. However, 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. According to Article 150 of the Treaty, the EU implements a vocational training policy which supports and supplements the action of the Member States, while respecting their responsibility for the content and organisation of vocational training. One of the aims is to stimulate cooperation on training between educational or training establishments and firms and means for better integration into the world of work.

In this area, there is therefore scope for action in terms of support for cooperation between Member States.

Against this background, the new communication for a new European strategy on health and safety at work for the period 2002–06 intends to strengthen opportunities.

This strategy is the result of a close consultation among the Member States' national authorities, the European Parliament, the Economic and Social Committee, the social partners, and a large number of experts.

Let me briefly describe some of the features of this strategy, as we expect them to be approved by the Commission within the next few days.

First of all, the strategy will be based on an all-inclusive approach to OSH, taking account not only of traditional risks for health and safety but also of recent changes in the world of work and the emergence of new risks, especially those of a psychosocial nature. The goal is to achieve complete physical, mental and social wellbeing at work.

The strategy is geared to enhancing the quality of work, and regards a safe and healthy working environment as one of its essential components.

Secondly, it aims at promoting a prevention culture where preventive health and safety measures should become the standard, in a work culture that seeks to avoid accidents and diseases rather than treating them in a fatalistic way.

Thirdly, it is based on the idea that an ambitious social policy is a key factor for improving competitiveness and that its absence inevitably results in heavy costs for the economy and society as a whole.

The strategy, in order to fulfil these ambitious objectives, combines a variety of political instruments (legislation, the social dialogue, progressive measures and best practices, corporate social responsibility and economic incentives) and builds on partnerships between all the players in the world of occupational safety and health.

As the Lisbon Summit stressed, Europe is going through a transition phase to a knowledge-based economy, which is marked by profound changes. These changes affect society, employment and health and safety:

- The labour market is developing increasingly new forms of employment, with strong growth in terms of temporary contract arrangements. Temporary work, part-time work and non-standard working times are also factors adding to the degree of risk. New technologies and new forms of work might reduce old risks, but they also bring new risks and illnesses, with muscular pain, back pain, stress, depression and anxiety being among the most prevalent.
- We face in Europe an ageing of the active population with an increase in the proportion of workers aged 50 and above and a reduction in the proportion of young people. Statistics ⁽²⁾ show that young people (age 18–24) tend to have more accidents at work (40 % higher than the average); temporary workers, mainly young people are increasingly vulnerable. These differences mean that we need to pay attention to the specific situation of the generations and age groups.
- Preventive measures should take account of the growing proportion of women in the workforce and of the risks to which women are particularly liable, covering the ergonomics, workplace design, the effects of exposure to physical, chemical and biological agents, as well as the physiological and psychological differences in the way work is organised.

In other words, we should be more vigilant and develop a more comprehensive approach to health and safety and take into account all constituent elements in order to improve quality of employment improving prevention for both 'traditional' and new risks.

How can we strengthen the prevention culture?

There are three mutually supportive elements for improving people's knowledge of risks:

- Education
- Awareness
- Anticipation of risks

Health and safety education and awareness rising, 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.

⁽²⁾ *European Statistics of Accidents at Work (ESAW)*, Eurostat, 1998.

We need to focus our efforts on educating the workforce of tomorrow, by ensuring that schools integrate OSH issues in the curricula from an early age with a view to making young people aware of the problem and changing the attitudes of future generations.

We all know the importance of lifelong learning and skills development in our knowledge-based economies. Health and safety training is central to this. All workers and managers, in particular those in smaller businesses where accidents are more frequent, should have access to updated training on health and safety issues throughout their career.

One last point I would like to highlight for those who may find that this ambitious policy might engender high costs:

The Commission considers that a 'safe and healthy working environment' and working organisation are performance factors for the economy and for the company, which in turn enhances the competitiveness of European businesses.

The absence of an occupational health and safety policy in the workplace or non-quality of work results in a loss of productive capacity. I do not want to bore you with extensive statistics. Let me just quote one figure at this point: in the year 1998, on average almost 350 000 people were forced to change jobs or their place of work or to reduce their working time ⁽³⁾ because of occupational accidents or illness. Over and above these human tragedies, this constitutes a waste of resources against a background of ageing of the EU working population.

On behalf of the European Commission, I wish to thank both the Spanish Presidency and the European Agency for Safety and Health for organising this seminar and providing us the opportunity to debate this issue.

⁽³⁾ European Union labour force survey (LFS), 'Occupational accidents and diseases', 1999.

Peter Skinner,
MEP, European Parliament

I would like to start by thanking the Spanish Presidency of the European Union and the European Agency for taking up such a fundamental subject, for tackling the health and safety challenges of the coming years and for organising this event.

The transition from school to work life is a great challenge for society as a whole. One of the things we have to do is to determine the levels at which we can act (primary, secondary, tertiary) and finally the labour market. The European Commission has constantly placed emphasis on the need to prepare the young for the labour market through education and training. However, we must not forget in this process the need to prepare the mentality and culture of new and young workers for a work environment that can be full of potential hazards and risks. We need to ensure a 'quality at work' environment for all and education is the first step in promoting the issue of 'quality at work', even before the future worker joins the labour force. Let us not forget that young workers are often the most vulnerable. According to Eurostat, the risk of an accident for people aged between 18 and 24 is 1.4 times greater than the average. Indeed many go straight into small firms where accident rates increase even further as we know.

The European Parliament has always seen education as an important area of EU policy. Over many years, therefore, we have pushed to increase the Parliament's influence over this key policy area which helps form the hearts and minds of so many of Europe's future citizens. It is a most popular element of 'Europe' per se. Likewise, the European Parliament has been the greatest EU institutional supporter of high levels of health and safety protection and quality at work. The Parliament has been instrumental in calling for the development of an EU strategy on safety and health and I am glad to hear that the Commission will shortly be adopting this strategy. The Parliament waits with great anticipation to receive a copy.

One of the key areas, which we hope will be developed in this strategy, is the 'Prevention culture'. The Parliament has traditionally been a strong supporter of legislative initiatives at the EU level. I believe now that we are on the verge of a change in this general trend. I do not mean to alarm those who are in favour of strong and reinforced legislative actions as this must remain the backbone of action for the European Union when and where the need arises. What I do mean is that the strategy now provides us with the opportunity to increase the profile of non-legislative actions as the necessary partner of legislative actions in order to support the implementation of the EU *acquis* on safety and health at work.

The Parliament has been supporting the non-legislative element of EU health and safety policy for some time through several important measures such as supporting the setting up of the Bilbao Agency, its support for the European Week and most recently through its support for the SME programme — all of which are also key elements which contribute to the EU prevention culture.

This EU prevention culture should consist of a menu of options at the EU level which will include all of these elements but which will also include the subject of today's seminar — education and training of future generations in the very basics of the prevention culture. The EU health and safety strategy will be key in developing the 'prevention culture' at all levels of education and training. I am looking forward to concrete proposals within the strategy on how the EU's existing resources and funding schemes such as the ESF, Leonardo, Socrates and Comenius for example can be harnessed to support this process. We heard yesterday from some who have already used Leonardo, but what about a separate line or better use of ESF. The Education DG obviously needs to be involved.

Likewise, 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’. Surely, education is a form of training or should we look at adding ‘education’ to the health and safety section of the employment guidelines? Training is already there. This would give us a very firm basis for action and cooperation at the 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. The examples presented at the seminar show that most Member States are active in this field already and any action would be based on a voluntary commitment to coordinate these actions and share experiences — perhaps becoming embodied in the new safety and health strategy! How might we also attach this to the Lisbon process — one area not touched on yet, but the belief that growth and employment will be generated in certain industries needs to be drawn in also.

In the European Parliament, we will keep a keen eye on how this issue will be tackled as the successful mainstreaming of OSH into education and training is the very basis for reaching our goal of safe, healthy and productive workplaces in the EU.

I expect that the Agency will play an important role in organising the collection and sharing of good practices from the Member States in order to facilitate the promotion and integration of systematic OSH information in the curricula at all levels of education and training.

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.

Florentino Alonso

It is important to transform what we have all been talking about, into something comprehensive. When we look at the situation in Spain, there are some specific topics.

1. In Spain, we have already been working in the field of training for several years. It was only since 1995, after the law on labour risk prevention, that we addressed a global strategy in this field: strengthen the training strategy as much as possible; include all parties involved, at all levels of education.
2. Updating the training is still a challenge, it is not merely a one-off campaign, but it has to be there all the time. Health and safety at work, and respect for the environment has to be incorporated into business production systems, not as an add-on.
3. Training and education should go hand in hand with having qualification and competencies, required for all workers. Creating a preventive culture of attitudes is one of our main challenges and we hope to have cooperation with other Member States on this.
4. Integration: training of experts (two different vocational training degrees in Spain).

To summarise the importance of Europe, efforts should be concentrated on creating attitudes and values, from the beginning starting in primary schools. The necessary strategy in the EU has to include carrying out collaborative research, with our own and European funds. We need to link training to research with the aim of producing experiences and adequate methods, elements that assist training (and keeping teachers updated). A new line of research has to be created, with a pedagogical databank in which the results of the research are presented.

In this respect, we are not talking about curricula, but rather about creating attitudes. Indeed, if we want to encourage risk management at the workplace, it is not enough to send out messages alone. It is possible that this necessitates further specialisation in the field of OSH: specific degrees for work at companies. What should the training be for people working in multidisciplinary services?

Marc Heselmans, Belgium
Ministry of Employment

In view of the final discussion, I would like to select just four solutions in terms of getting the development of a safety culture in education going. This selection is based on two criteria:

- the approach has been tested in Belgium and is of strategic value for the development of a safety culture;
- a European dimension could provide added value.

First: involve the existing prevention services

Integrating an OSH attitude into education requires attention to the cognitive and emotional elements of this attitude. The traditional employees of training establishments very often have little expertise in this area. In contrast, the experts should have the necessary training and capabilities or competencies, because of the requirements of the European framework directive.

In Belgium, experts are grouped into internal or external services for prevention and protection at work. Experience from pilot projects demonstrates that experts make a very positive contribution in inspiring teachers to integrate OSH into the parts of the education system for which they are responsible.

Second: a national model workplace

The techniques for adapting existing machines and installations according to the European directives are not easy. Education institutes often do not possess the necessary knowledge to do so.

This has brought Belgium to develop its own techniques for certain machines and classic installations and to organise demonstrations through a central model workplace. This initiative has been highly successful, and it has to be said that not only the teachers, but also the students make use of this service. The initial aim was to inspire the teachers, together with their students, to adapt the machines in their own establishment through study visits and practical work.

Third: develop networks of university research departments

It is extremely difficult to convince university lecturers to integrate OSH into their lessons. However, lecturers have generally been used to integrating the results of research into their courses.

In this way, Belgium has got university research departments that include industrial technology in their teaching programmes, to carry out a great number of small research projects, with limited means. The results of the research projects were modest but the growth of interest in OSH within these universities has been significant.

Four: an instrument for measuring OSH in education establishments

It is difficult to integrate OSH attitudes in education if the person in charge of training does not take the first step. This first step is extremely important for raising interest in OSH. 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 education establishments and their directors about OSH in their establishment (called 'OSH index'). It covers traditional OSH problems present in industrial workplaces.

The directors are regularly informed of the situation in their department compared to others.

Since this instrument was introduced, interest in OSH has developed spectacularly. Several directors have even spontaneously set up their own initiatives for integrating OSH into the education they provide.

In conclusion, and without wanting to hamper your creativity in finding European added value, I offer four rhetorical questions:

- Can Europe develop specialised handbooks for prevention services to help encourage them to give advice to education establishments?
- Can the European Commission support and steer a network of model workshops in the Member States?
- Can the sixth framework research programme, besides supporting prestigious and expensive programmes, create possibilities for OSH research projects that are maybe less ambitious?
- Can the European Agency develop an instrument for measuring OSH for education establishments, applicable throughout the Community?

In addition to the rhetorical 'yes', I hope of course that there will be a corresponding action, in the same vein as the 'yes'.

Morten Bergulf,
the Ministry for Employment, Denmark

Safety and health at work — Danish experience with mainstreaming

Action programme — 'A clean working environment 2005'

In 1995, the Danish Government and the social partners reached agreement on an action programme 'A clean working environment 2005'. This action programme points — among other things — to the need to launch initiatives at all levels to develop and promote learning about occupational safety and health. The action programme states:

'The government finds it very important to strengthen and further develop the broad support for the work in the field of safety and health at work in the coming years. On the basis of the level for learning about occupational safety and health, action will be taken, at all levels, in order to develop and extend learning about occupational safety and health. In this connection, the need is stressed for a further prioritisation of learning about occupational safety and health in universities and other institutions for higher education — in particular, in technical education programmes.

Special emphasis should be put on strengthening learning about safety and health at work for children and young persons so that they will, at an early stage, be equipped to tackle any working environment problems they may be facing in their jobs after school hours or later on in the labour market.

Information and educational activities are a central task for labour-market organisations. These initiatives should be strengthened.'

In connection with the action programme, a pool of DKK 3.2 million was earmarked for the period 1997–2001 for pilot projects under the Ministry of Employment to study the working environment in education and training institutions. These funds were prioritised as follows:

1. Pilot projects concerning the involvement of pupils and students in safety work in schools and in education and training institutions.
2. Pilot projects to map out occupational safety and health in schools and in education and training institutions.
3. Pilot projects with lessons in safety and health at work and educational materials and documentation.

The projects to which financial support has been granted are aimed at trainees and apprentices in drawing up workplace assessments (WPA), involving them in safety work, mapping out safety and health conditions in laboratories, smithies and the manufacture of wood products.

An inter-ministerial working group was also set up in 1999 to look at occupational safety and health for pupils and students. In its final report, this working group has, among other things, recommended the following initiatives:

- to give pupils and students a right to be involved in the drawing up of those parts of workplace assessments which concern those fields of the working environment legislation which affect pupils and students;

- to give pupils and students a right to be involved in the safety organisation of the education and training institutions in relevant contexts, i.e. when the safety organisation is dealing with questions of importance to the safety and health conditions for pupils and students.

These recommendations are included in an act which was presented by the Ministry of Education in the spring of 2000 (the act on the teaching environment for school children and students). The act aims at promoting a safe and sound teaching environment in Denmark. According to the act, pupils and students will have a right to elect working environment representatives. They will participate in the safety and health work of the education and training institutions, which will be required to draw up a written assessment of the teaching environment; the content of this assessment will resemble the content of ordinary workplace assessments.

The experience from the projects launched under the action programme has been positive, but it must be admitted that there have not been many concrete initiatives so far. Generally, it has shown that it is difficult to integrate one policy area — occupational safety and health — into another policy area — education.

The role of the European Union

It is expected that learning about occupational safety and health will become a theme in the coming EU strategy for safety and health at work.

The Commission presented an outline to the Advisory Committee highlighting a number of issues:

- that young persons and persons in their first job constitute a special risk group;
- that educational and vocational training systems are important actors/participants which need to be mobilised;
- that one of the most important ways of creating a new culture of preventive action is by investing in the new generations with a general and systematic approach and integrated educational programmes (schools, universities, vocational training, etc.) and special work-introduction programmes for apprentices and trainees;
- that indicators should be drawn up for structures concerning education and occupational safety and health as part of the syllabuses.

The thrust of the strategy will thus be on mainstreaming safety and health at work into other policy areas — in this case into the area of education.

On the basis of the experience we have seen in Denmark, we must admit that mainstreaming is easier said than done. In Denmark, we have obtained certain results in the field of occupational safety and health and education, but it has not always been an easy process, primarily because we have to make different systems communicate with each other and take joint action.

With particular regard to mainstreaming, the European Union may have an important role to play as the drawing up of indicators, open coordination and exchange of best practice will give the Member States useful instruments to make this cross-sector cooperation functional. It will be visible if nothing is done.

Natascha Waltke, Belgium

UNICE

The development of a preventive culture is a central element of a medium- to long-term strategy to improve occupational safety and health. Above all, it requires adequate education and training, as well as the raising of risk awareness in general.

Up to 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 their value. However, UNICE believes that efforts in this context can only bear fruit if this policy is henceforth widened into a strategy to raise risk awareness which goes beyond a strict definition of the active population and the workplace.

In UNICE's view, the challenge is to develop a general culture which values health protection in the different circumstances of life and in the face of the many risks which a person may encounter. In its interim opinion of November 2001 on the future Community strategy on occupational safety and health, the ACSHH also recognises this.

Risk prevention must become a prevailing attitude, almost a second nature. Risk control for safety and health must be recognised as an essential element in everyone's life.

This requires promotion of education and training, and development of actions to raise awareness of risks and prevention.

In this context, it is of great importance that children and young people at school are made aware of risks, learn about risk prevention and health promotion, and adopt 'good habits' at a young age.

Aspects relating to safety and health need to be integrated into all stages of education and training. The target public for training actions must go beyond the working population. Aspects linked to safety and health should not be tackled separately, but incorporated as related issues within the various training courses available.

It is obvious that future workers must be trained with regard to OSH issues as part of their vocational training, but future managers should be as well.

This seminar has provided examples of how OSH is integrated into different education/training stages in different EU Member States. Member States should continue to improve their education and training policies, in order to enable better management of OSH challenges. But, of course, the creation of a prevention culture is the joint responsibility of all players involved, including employers, workers, social partners and the European Commission.

Owen Tudor, UK

Training is often forgotten when talking about risk, hazards or OSH. Employers have a legal responsibility regarding this, in consultation with the social representatives.

In the changing labour market, current efforts are no longer adequate. General understanding of risk assessment and management must exist, but also specific knowledge before entering the job market.

It is typical today that people move quickly from one job to another. Frequent change in employment results in a training challenge. So what is needed is a risk-literate working population. There are two steps to reach this: we need the European Union to place legal obligations on the government to translate these ideas into legislation. Furthermore, an effort has to be made to increase the requirements regarding transferability.

Other key elements today are (these are already addressed by the other speakers) the important role of the Agency and effective control on the safety skills of workers.

In addition, the social partners have an important role: to consult and to motivate. The trade unions can have an enormous access to the children via the teachers. However, it is important that they be themselves directly involved in the schools, and work together with the schools.

It is important to note that, already in 1993, a Commission document existed that included excellent proposals on what needs to be done in relation to OSH and education, with which all would agree. This document is already nine years old...

Concluding remarks

Bernard Jansen

It is clear from this round table that an EU strategy is important in obtaining the integration of OSH in education. We are working on this and it will be presented to the EU Social Council.

The links between education and OSH are important, but at the moment in education policy, the Treaty does not give legislative powers. Therefore, the Commission contributes to the quality of education by supporting actions, for example exchange of experiences between different Member States. This seminar is the starting point of the strategy, which will be the result of a close cooperation of the European Committee, Member States, the social partners and the Economic and Social Committee.

Features of this strategy

The strategy should be based on or stress the following aspects:

- An all-inclusive approach to wellbeing at work: mainstreaming. This means concentrating not only on the traditional OSH risks, but also on the new aspects in the changing world of work and new psychosocial risks; the goal is to have physical, social and mental health at work.
- Enhancing the quality of work by making the working environment safer.
- Promoting a prevention culture.
- Preventive measures should become a standard (rather than treating health and safety as a subject in which treating accidents predominates).

Social policy is a key factor to improve competitiveness:

- Improving the competitiveness of economies and the costs for society as a whole. Giving the message that the absence of OSH represents an enormous cost for the society and its negative impact is not always taken into account.
- New forms of employment (e.g. part-time work) have added to the degree of risks and must therefore be taken into account; new technologies add new risks as well (stress, violence, musculoskeletal disorders, sexual harassment, etc.).
- Ageing of the population and reduction of the proportion of young people has consequences. It is known that these people have more accidents (e.g. especially with regard to temporary workers).

There is a growing proportion of women in the workforce: health and safety issues involving ergonomics and work organisation for this group in particular have to be taken into account.

How can we strengthen the prevention culture?

People's knowledge about risk: awareness training needs to be supported, by mainstreaming of OSH throughout EU policies.

Juan Carlos Aparicio Pérez,
Minister for Labour and Social Affairs

First of all, I would like to thank all those taking part in this seminar for their excellent contributions to the debate on this highly important subject. These covered not only occupational but also social and human areas, which are health and safety at work and inextricably linked to educational policies.

More particularly, I would like to thank the speakers for their contributions, the Community institutions (Parliament, Commission, Economic and Social Council) for their involvement, the European representatives of workers and unions, specifically the ETUC and UNICE, the representatives of the Member States and, finally, the European Agency for Health and Safety at Work for the important role it has played in the organisation of this seminar.

I believe that throughout these two days we have seen a broad sharing of practical experience on how to include the safety culture in different levels of education and training, in different sectors and in the different Member States of the Union.

This method of sharing good practice, which is producing such good results in other social policy areas, will no doubt be a valuable contribution to this subject. It will enable us to tackle new approaches in our respective countries on the basis of the experience of members of our Community.

I believe that all the contributions were eminently practical, backed up with technical information. These resulted in an open debate, which should help to verify that the shared practices are viable and capable of wider application.

For Spain, prevention in health and safety at work is a vitally important question, both in our labour market and in our society. Because of this, the Spanish Presidency of the European Union has wanted to make this question a priority among its objectives. In establishing the European social agenda, the Nice Summit emphasised the need to develop the qualitative aspects of work, among which conditions of health and safety are without doubt a key factor.

These aspects will be dealt with throughout the Spanish Presidency of the European Union at different conferences, seminars and meetings, of which this is only the first. I would like to highlight that on 22 and 23 April a Conference will be held in Barcelona at which the presentation by the Commission is planned of the new 'Community strategy for health and safety at work for the period 2002–06'. The launching of this strategy is extremely important. This is because it presupposes the establishment of a common European standard for meeting the challenge, which we all face in improving conditions of health and safety at work.

Turning to the subject of this seminar, the 'integration of health and safety at work into educational policies', I would like to offer a brief reflection, which I believe, is consistent with what has been said during the seminar

Allow me to begin with a quotation from the statement of reasons for our law of prevention of occupational risks which, as I am sure you all know, transposes the framework directive into Spanish law. It states:

'[...] This being a law that pursues prevention above all, its articulation cannot rest exclusively on the order of the obligations and responsibilities of the players directly involved in work. The proposal to develop a genuine culture of prevention, through promoting the improvement of education in this matter at all levels of education, involves society as a whole and is one of the basic objectives and perhaps most important effects for the future of those pursued by the present law'.

I consider that it contains the key to what this society wants, which is none other than the establishment of a culture of prevention; in this instance, I am using 'culture' to mean the context and the values which may make us respond to external events in a specific way.

The question, which we might ask, would therefore be: 'does the value of health at work form part of European culture?'

I would say that the answer to this question can only be 'yes'.

We cannot talk about health at work as a social reality if we only call on it at times of need or when an accident occurs. A social value should, on the contrary, be part of our everyday life.

We should therefore incorporate the value of health at work in a consistent and gradual manner into the whole of the social productive framework (our law talks about society as a whole). Only in this way will we be able to think about a genuine culture of prevention.

And, for this purpose, it is fundamental that this value be incorporated from school onwards, as part of education from primary level, so that it is integrated transversally into every type of curriculum.

It is not so much a matter of generating new teaching material rather than establishing this principle of transversality, incorporating the essence of the culture of prevention in education, creating implicitly the right attitudes and ways of behaving in relation to health and safety at work in society.

In addition, we cannot overlook such a fundamental aspect as the training of professionals and experts, which involves more structured, concrete and technical knowledge.

Vocational training and university training determine the combination of specific disciplines that form the framework for the needs of qualified personnel in the productive society. The plurality of degrees and diplomas, at different levels, is a response to demand from society, and to that extent they demonstrate both the social requirement and the level of that requirement.

In the sphere of health at work, society now needs to provide itself with real professionals and experts to form part of this culture of prevention. Professionals qualified on the basis of academic teaching, and of experts in the matter which concerns us. In fact, within the training currently available within Spanish professional training, there is already the specialism of expert in prevention of occupational risks (leading to the certificate of professionalism). Similarly, various projects exist which, as in other countries of the European Union, are promoting the development of university courses on health and safety at work.

These, to my mind, would be the three supports of the culture of prevention: to enter into social experience, that is to say to incorporate the value operationally in society as a whole; to penetrate the world of education, to imbue all learning with the desired value in the world of school and with the knowledge required for every job to be able to be carried out under optimal conditions of safety; and, finally, to train experts capable of research at the highest level of knowledge and able to affect the world of work. Spain is devoting special attention to all these aspects, because we consider that education and training are a necessary — although, I have to say, not sufficient — condition for more effective prevention of occupational risks in the medium and long term. And for this, we are putting the finishing touches to special cooperation with our Ministry of Education, Culture and Sport, which will make it possible to coordinate our efforts in this sphere.

I find — and it has been highlighted in this seminar — that something similar is happening in every country of the Union. I therefore believe that we have to make use of these 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. Promoting a European network for this will allow good practice and experiences of the different countries to be channelled and spread.

While I realise it is difficult to get progress on joint programmes in this sphere, it is worthwhile making progress in the definition and implementation of common criteria. While respecting the individual features of each country, this would allow the results of the studies and investigations in this sphere to be used, on the one hand, and to facilitate the exchange and mobility of professionals in the European Union, on the other. As a result, it will encourage everyone to prepare research projects on education and training in prevention, which may be developed in collaboration between different countries.

At the same time, obviously, efforts must be made to ensure that European training and research programmes gradually incorporate these approaches and that joint projects of major interest in this field can be channelled and, where appropriate, financed.

As already indicated, this seminar should provide an impetus in this direction and its conclusions will be set out, almost immediately, in little more than a month, on the occasion of the Barcelona conference.

Thank you again to all the participants for the warm reception and to the institutions and speakers for the high quality of their contributions, in particular to the European Agency. I can assure you that I intend to continue working on this important task: education in the prevention of occupational risks.

Hans-Horst Konkolewsky

The Director of the European Agency thanked the Spanish Presidency for taking the initiative in holding this event, which the Agency would be following up. He summarised the background to the seminar which was common across Europe: it is increasingly difficult to reduce accidents at work. It is not because there is a lack of legislation, rather a lack of proper implementation at the workplace. We know from accident data that younger workers have a higher risk of having an accident (sometimes even two or three times higher).

What have we learned?

1. OSH education strategy, in some Member States already present, should be developed. The Agency will help the EU to bring information together.
2. We have to start early, from the very beginning when children enter the education system. It is hard work, and needs to be done continuously, and be part of lifelong learning.
3. There are a number of obstacles: SH & education are handled in different government ministries, but this can be overcome because everybody agrees that it is reasonable to bring the two ways of thinking together and to learn from each other.
4. Not only a school issue, but also involve environment, parents, teachers and forming minds.

European initiatives are welcome. Education and training will be a cornerstone of the new strategy. There are already funding schemes available, which could help further our aims. We need to integrate our priorities into these programmes.

ANNEX



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

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 - 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
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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



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.

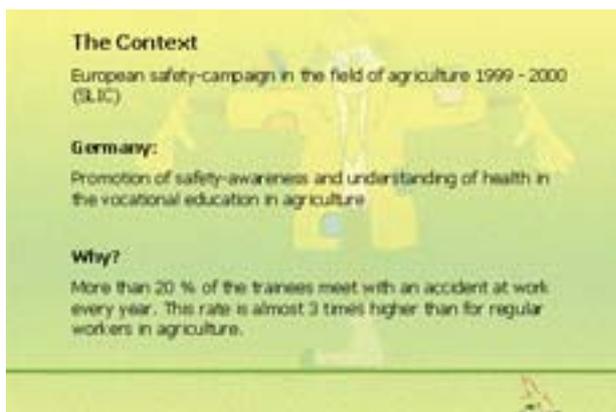
3. OSH and adults — technical and vocational education

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.

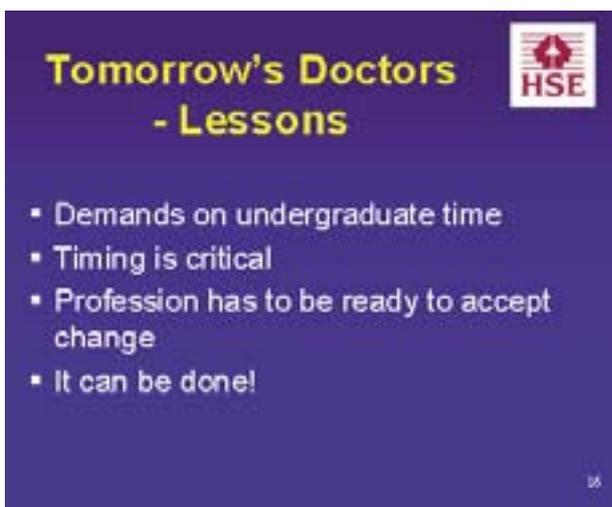
Tactics

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

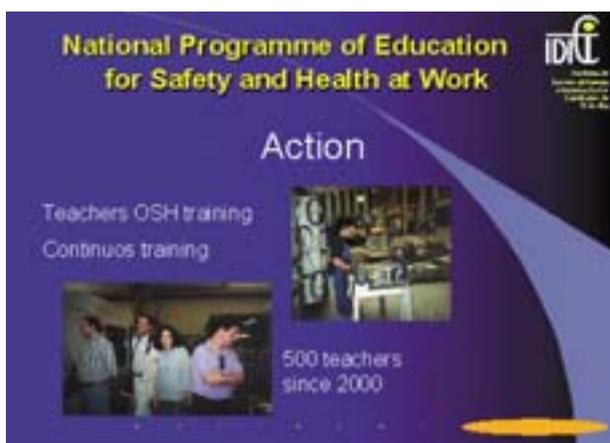
Government and social partners considered as a priority the development of measures to improve work conditions. One way of achieving this was seen as the integration of OSH content in general and technical education curricula, including teacher training in these subjects. This was seen as being a key 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:

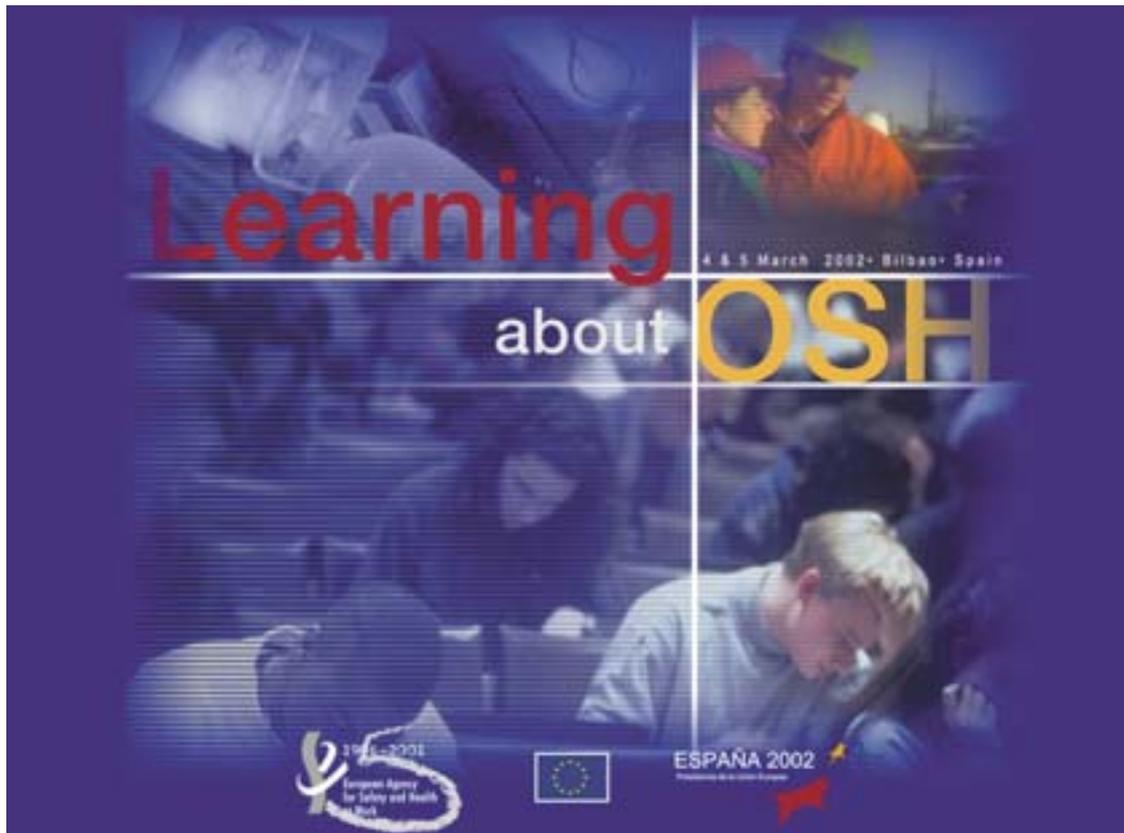
'I believe that we have to make use of synergies and combined forces to produce mutual support in this field. I am convinced that this seminar will provide the impetus necessary to promote cooperation between our countries in matters of education and training.'

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). 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.



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