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Occupational Safety and Health Education of Vocational Teachers

An Investigation into the Member States

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Foreword

This present study has been produced and published by the Swedish National Institute for Working Life within the framework of the SOCRATES-project Computer Network based Health and Safety Open and Distance Learning.

Collaborating institutions in this transnational project are the Swedish National Institute for Working Life in Solna, Sweden; the Danish Working Environment Fund, in Copenhagen, Denmark; the Open University in Milton Keynes, the United Kingdom; the Institute for the Development and Inspection of Working Conditions in Lisbon, Portugal; the Universidade Aberta in Lisbon, Portugal; and the University of Minho in Guimaraes, Portugal.

The study has been carried out and is written by Elisabet Hagberg Batel, the Swedish National Institute for Working Life. Particular thanks to Ann-Marie Sandal, the Swedish National Institute for Working Life, for her work with the Ortelius Database, and Eric Elgemyr, the Swedish National Institute for Working Life, for the careful editing.

List of abbreviations used

CEDEFOP – European Centre for the Development of Vocational Training

EURYDICE – Education Information Network in the European Union and the EFTA/EEA Countries

ICDL-DED – International Centre for Distance Learning Database

IDICT – Instituto Nacional de Inspeccao das Condiçoes do Trabalho (Portugal)

NEBOSH – National Examination Board of Safety and Health (the UK)

NIWL – National Institute for Working Life (Sweden)

ODL – Open and Distance Learning

OSH – Occupational Safety and Health

SOCRATES – the European Community action programme for co-operation in the field of education

UNESCO – Organization for Economic Co-Operation and Development

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1. Introduction

Statistics published in 1996 by the European Foundation for the Improvement of Living and Working Conditions show that each year there are 8 000 fatal accidents and 4.5 million accidents resulting in absences from work. An estimated 20 000 million ECU is paid each year in compensation for occupational injuries and illnesses.

The next generation of employers and employees are trained in today's school. The teachers in upper secondary schools, polytechnics and vocational training institutions are thus vital for increasing the knowledge of health and safety matters, knowledge that may contribute to a better and safer working environment while saving not only money, but also, most importantly, lives.

European teachers will always need to improve their knowledge in the field of occupational safety and health education. They also need to increase their experience of how to make use of new technologies – such as the Internet and computerized open and distance learning – as an enhancement to their teaching and to improve their and their students' opportunities for lifelong learning.

For these reasons the collaborating organizations in this project submitted an application to the SOCRATES Bureau in Brussels in 1996 to develop a distance taught, transnational, Internet based pilot course in occupational safety and health, tailored to meet the requirements of vocational teachers. The pilot course is aimed at combining occupational safety and health education and the use of new technologies, and will hopefully reach a wider audience of students than would be rendered through traditional teaching.

The project, that was approved by the Commission in the spring of 1996, is a European partnership project within the SOCRATES Adult Education Programme. The objectives of the project are to develop courses, and to conduct a study on already existing training in the field in the Member States.

The study is to "make an inventory of the actual [open and distance learning] ODL situation and the health and safety education in vocational training within the European Union". At the first workshop on the project, held in Stockholm in November 1996, the project partners found that the term vocational training used in the project application was impractically broad, and that it was necessary to narrow the definition of the target audience. The project interpreted vocational training as the training of vocational teachers.

The study was to investigate occupational safety and health education of vocational teachers in the Member States and report on the status of the field. The knowledge gained is to be disseminated and will hopefully serve as a source of information, and a starting point for a European Network of organizations operating in the field.

2. Materials and methods

The study was conducted during a six-month period in 1997 and sought data that encompassed all three of the following criteria:

1. (occupational)safety and health training;
2. open and distance learning;*
3. training of vocational teachers.

The compilation of data was primarily obtained by searching a number of well-established databases, namely:

1. the CEDEFOP's database on vocational training institutions in the EU;
2. the ICDL – DED's database on distance learning;
3. the UNESCO's databases on higher education;
4. the ORTELIUS database on higher education in the EU;
5. the bibliographic database ARBLINE on occupational health and working life.

The Internet was also used as a source of information, and the search services of Euroseek, Yahoo and Alta Vista were consulted using the following keywords:

1. occupational safety;
2. health and safety;
3. distance education;
4. vocational education;
5. teacher training;
6. education and training.

* This study uses the concept of open and distance learning as defined by the Open University in Milton Keynes, the UK: open as to people, places, methods and ideas.

Based on the information gathered via the databases, the Internet and literature reviews, three questionnaires were designed and directed to:

1. the Ministries of Education in the Member States;
2. teacher training institutions in the Member States;
3. vocational training institutions in the Member States.

The initial work was followed up with a comprehensive correspondence with open universities, distance education associations and centres, universities and university colleges with open learning programmes, institutes providing training in (occupational) safety and health, and national bodies dealing with health and safety matters.

3. Results

3.1 Database searches

3.1.1 The CEDEFOP – Database on Vocational Education and Training in the Member States

The CEDEFOP – the European Centre for the Development of Vocational Training – is a Community body established by the Council of Ministers’ decision in 1975. The aim of the centre is to assist the Commission in encouraging the promotion and development of vocational training and of in-service training. The main tasks of the CEDEFOP are to compile selected documentation, to contribute to the development and co-ordination of research and to disseminate documentation and information on matters relating to vocational training. Since 1995 the Centre has been located to Thessaloniki in Greece.

The CEDEFOP’s information services were addressed with a request for a database search on vocational training institutions delivering occupational safety and health training in the Member States. The database search provided information on 190 training organizations delivering occupational safety training. The results are shown in the following table.

Table 1. Breakdown by country of training institutions delivering occupational safety training according to the CEDEFOP’s Database on Vocational Education and Training in the Member States.

Country	No. of institutions	No. of OSH	No. of ODL	No. teacher training	No. ODL and teacher training
Belgium	2				
Finland	2	1			
France	155		4	29	3
Germany	1				
Ireland	1				
Netherlands	1				
Portugal	24				
Spain	3				
United Kingdom	1				
<i>Total:</i>	<i>190</i>	<i>1</i>	<i>4</i>	<i>29</i>	<i>3</i>

As table 1 shows, most of the training institutions referred are in France, namely 155 out of the total 190. Of these 155 training institutions delivering occupational safety training, 29 also provide training for teaching personnel, four distance training and three training for teaching personnel as well as distance training. These 36 training institutions were asked to complete a questionnaire. Of the 36 institutions, one has returned the questionnaire: the A.P.P. Greta Haute Alsace. In their reply they state that the institution provides continuing education for vocational teachers taught at a distance, but the training courses do not include any component of occupational safety and health.

In Finland one training centre was asked to complete a questionnaire, the Siikaranta College, which is a provider of distance taught courses. In their reply they state that the Siikaranta College delivers courses in occupational safety and health, but these are not taught at a distance. Moreover, the target groups of their training courses are trade union members and officers, and only a few vocational teachers have attended the courses over the years.

Out of the 34 remaining institutions, 24 are in Portugal, three in Spain, two in Belgium and one each in the United Kingdom, Ireland, Germany, the Netherlands and Finland. The two institutions referred to in Belgium were the Association Nationale pour la Prévention Accidents du Travail, the ANPAT, and the European Trade Union Technical Bureau for Health and Safety, the TUTB, both of which had already been addressed with a letter. (See 3.4 *Other sources*). None of the other 32 training institutions provide distance training or training for teaching personnel and were therefore not contacted.

3.1.2 The ICDL-DED – International Centre for Distance Learning Database

The ICDL-DED's Database lists over 30 000 distance taught courses for over 300 Commonwealth institutions and contains a directory of over 850 worldwide distance teaching institutions. It also contains a literature database that abstracts over 8 000 items collected by the ICDL and includes the full text of nearly 150 documents.

The database was consulted at the Open University in Milton Keynes, the United Kingdom. A worldwide search was made on the keywords: 1. distance taught courses; and 2. health and/or safety. The search gave 364 hits, geographically divided as shown in the following table.

Table 2. Number of distance taught courses by country according to the search in ICDL-DED's Database on Distance Learning.

	No.
<i>Europe</i>	
United Kingdom	180
the Netherlands	1
<i>North America</i>	
Canada	136
<i>South America</i>	
Venezuela	1
Chile	1
<i>Asia</i>	
India	19
Sri Lanka	5
Pakistan	2
Singapore	1
Hong Kong	2
<i>Africa</i>	
Kenya	1
Zimbabwe	3
Nigeria	1
South Africa	11
<i>Total:</i>	364

Table 2 shows that of the 364 distance taught courses with a health and/or safety component, 183 refer to countries outside of Europe and 181 to countries in Europe, namely one in the Netherlands – the Open University in Heerlen that had already been addressed – (See 3.4 *Other sources*) and 180 in the United Kingdom. Of these 180 courses – listed along with a brief description in the search results – twelve are headed as courses on *occupational* safety and health, all leading up to nationally recognized certificates or diplomas awarded by the NEBOSH (NEBOSH is the acronym for

the National Examination Board in Occupational Safety and Health in the United Kingdom). The courses are, however, not tailored for any specific target group, and for that reason the course providers were not addressed.

A second search was made in the ICDL-DED's Database, this time geographically restricted to the United Kingdom and Ireland, on the keywords occupational safety and health. The search gave 196 hits on organizations dealing with occupational safety and health matters and training courses in the field.

Based on the information gained, 29 institutions in the United Kingdom and Ireland were addressed with a letter asking for further information on their training activities, 22 of which in England, four in Scotland and three in Ireland. The results are shown in table 3.

As the table shows, 27 of the 29 addressed institutions responded to the request for information. Of the replying institutions, 23 offer courses on occupational safety and health – 18 of which leading up to nationally recognized awards like the NEBOSH Certificate or Diploma – whereof 20 at the time of the request were offered as part of an open and distance learning programme. The University of Portsmouth, a major producer of occupational safety and health open learning material, has produced the course material that seven of these 20 institutions use.

The University of Portsmouth state in their reply that they know that individuals go on to teach after gaining their qualifications. The University, however, does not keep records on the students' career after they have gained the award and, consequently, cannot offer any statistical information.

The only replying institutions that could provide statistical information on teachers is the Tim Prestage Limited. They state in their reply that approximately 12 per cent of their course members are teachers and lecturers in higher education.

As a whole, the results of the database searches seem to indicate that although there are many training courses on occupational safety and health matters in the United Kingdom, no courses are directed towards the targeted audience of this study – vocational teachers. None of the 196 organizations listed in the second search on the United Kingdom e.g. specifically declare that the target

Table 3. Addressed institutions providing OSH training at a distance in the United Kingdom and Ireland according to the ICDL-DED's Database on Distance Learning.

	Reply	ODL	OSH	
<i>England and Wales</i>				
The Professional Training Centre	x	x	x	NEBOSH c and d
Tim Prestage Limited	x	x	x	NEBOSH c and d*
Stafford College	x	x	x	NEBOSH c and d
Cannock Chase Technical College	x	x	x	NEBOSH d*
University of Portsmouth	x	x	x	NEBOSH d
Sommerset College of Arts and Technology	x	-	x	NEBOSH
Bridgend College	x	-	x	NEBOSH
Suffolk College	x	x	x	
South Tyneside College	x	x	x	NEBOSH c*
City College Norwich	x	x	x	NEBOSH c*
L Nettleton College	x	x	x	NEBOSH c*
Grimsby College	x	x	x	NEBOSH c and d
University of Greenwich	x	x	x	
University of Wolverhampton	x	x	x	
Neath Port Talbot County Borough	x	x	x	NEBOSH c and d
Key Health and Safety	x	x	x	NEBOSH
West Anglia Training Association	x	x	x	NEBOSH c and d*
Thames Valley University	x	-	-	
J&J Training Services Ltd	x	-	x	
South Devon College	x	-	-	
Thames Valley IOSH Branch	x	-	-	
ACT Associates	x	-	-	
<i>Scotland</i>				
Offshore Petroleum Industry Training Organization	x	x	x	
Open Learning in Scotland	x	x	x	NEBOSH c and d
Institute of Occupational Medicine	x	x	x	NEBOSH c*
Royal Society for the Prevention of Accidents	x	x	x	NEBOSH c
<i>Ireland</i>				
The European Foundation for the Improvement of Living and Working Conditions	-	-	-	
Health and Safety Authority	-	-	-	
Safety Advice Centre	x	x	x	NEBOSH

c = NEBOSH Certificate, d = NEBOSH Diploma,

* = material produced by the University of Portsmouth.

group of their training courses on occupational safety and health is teachers, but employers, managers, employees, professional health and safety practitioners, safety experts, trade union safety representatives etc., and the training is tailored to meet the requirements of specific industries and their employees.

A review of national educational material used in occupational safety and health training courses in the United Kingdom was made by the UK collaborating institution in the project. The interested reader is advised to consult Appendix 6: *Inventory of national educational material used in occupational safety and health training in the United Kingdom*.

3.1.3 The UNESCO – Databases on Higher Education

A request for information was sent to the UNESCO databases:

1. the HEDATA Database, that contains detailed information on universities and other institutions of university status on e.g. studies and diplomas. The request was sent to the IAU/ UNESCO Information Centre on Higher Education in Paris;
2. the INISTE Database, that contains data on training organizations in the field of science and technology with reference to primary and secondary schools and related teacher training. The request was sent to the UNESCO Section for Science and Technology in Paris;
3. the INNODATA Database, that contains data on educational innovations in curriculum teaching methods and teacher training, located at the International Bureau of Education, the Documentation and Information Unit, in Switzerland;
4. the MINERVA Database, with data on European higher education systems and recognized institutions on higher education in the European region. This request was sent to the European Centre for Higher Education, the CEPES, in Bucarest;
5. the STUDY ABROAD Database, with data on international and national scholarships and courses offered concerning post-secondary education and training in all academic and professional fields in 134 countries at the UNESCO Section of Higher Education in Paris, and

6. the TRACE Database, that contains data on higher education systems in over 170 countries with information on individual institutions, academic divisions, courses etc. at the IAE/ UNESCO Centre on Higher Education in Paris.

No replies were obtained from the databases HEDATA and INISTE. The reply from INNODATA stated that the database did not contain any descriptions on projects that were relevant to the request. The reply from the European Centre for Higher Education concerning the MINERVA Database, informed that the Centre abandoned the MINERVA Database in 1996, and they referred to WAD – the World Academic Database on CD-Rom – and the CEDEFOP. The reply from the database STUDY ABROAD informed that the request had been forwarded to the International Bureau of Education which, in its turn, referred to the XXIXth edition of *Study Abroad* published jointly by the UNESCO and the International Bureau of Education. The reply from the database TRACE also referred to the WAD CD-Rom, that combines data from the IAU institutional database and information available through TRACE. References were also made to the Ortelius Database.

As suggested by the International Bureau of Education, the XXIXth edition of *Study Abroad* was consulted. The directory contains 3 082 entries concerning post-secondary education and training in all academic and professional fields in 134 countries, and information on scholarships, university-level courses, entry-level upgrading and short-term courses, training programmes, extra-mural and other continuing education programmes. The first part lists international scholarships and courses, grouped by alphabetical order of contributing international organizations. The second part lists national scholarships and courses, by country. The XXIXth edition of *Study Abroad* also contains three indexes: *Index of International Organizations*; *Index of National Institutions* and *Index to Subjects of Study*.

For this study the *Index to Subjects of Study* was consulted, and the courses listed under the headings in table 4.

Table 4. Number of training institutions by subject field listed in the Index to Subjects of Study in the XXIXth edition of *Study Abroad*.

Subject field	No. of training institutions	No. in the EU	EU (%)
Education	155	58	37
Special Education	12	7	58
Vocational Training	24	4	17
Health and Hygiene	49	11	22
All Major Fields*	216	95	44
<i>Total:</i>	<i>456</i>	<i>175</i>	<i>38</i>

*Since many courses are offered without restrictions as to subject field, reference to those can be found under this heading.

Of the 175 training institutions in the Member States, the two which have training referred to as occupational safety and health in the index were consulted. These are the Nordic Institute for Advanced Training in Occupational Health, the NIVA, that runs advanced training courses in occupational safety and health, and the University of Kuopio, that gives courses in occupational health. Both training institutions were addressed with a request for further information. However, as it proved, none of them organize distance taught courses, nor is their training targeted at vocational teachers.

3.1.4 The ORTELIUS – Database on Higher Education in the Member States

The Swedish Ministry of Education recommended the Ortelius Database as a tool for obtaining information on teacher training institutions in the Member States. The Ortelius Database, that was created in 1993 as a result of a decision the Education Ministers of the European Communities, is a detailed guide to higher education in Europe. The information available describes inter alia the general aspects of the national education systems of the 15 Member States, and in depth the higher education institutions, their faculties, departments, laboratories, and the courses offered, as well as the degrees and certificates of study awarded. In August 1997 the Ortelius Database contained records of approximately 2 090 institutions, and the selected national agencies operating in

the higher education sector from each Member State participate actively in both collecting and updating the information in their respective countries.

After consulting local representatives of the Ortelius Consortium, it was concluded that to avoid irrelevant searches, searches would have to be narrowed by using area descriptors. The suggested area descriptors were pedagogy and didactics; teacher education; occupational health; environmental health; safety technology and social medicine. However, the price for such a batch-service was the same as a subscription to the Ortelius Database throughout 1997. A subscription would furthermore give all-year availability, offer the possibility of performing searches and cross-searches freely, and have the advantage of giving direct access to institutions with curricula indexed and direct links to institutions' homepages and e-mail addresses. Consequently, a subscription with a personal password was arranged for exploring the Ortelius Database.

The interface of the Ortelius Database offers two search pathways: 1. by specific institution; 2. by general criteria, e.g geographical location, field of study, qualification level, language of instruction. This study used search pathway 2, and the criteria geographical location and field of study. The chosen fields of study – teachers' education, health and safety and environmental health – could not be combined into a single criterion in the database. The search was thus restricted to teacher education.

A total of 617 higher education institutions in the Member States were listed in the Ortelius Database. It was impossible to restrict the search by the level of the teacher training offered by the teaching institutions, consequently, the results may include primary, secondary and upper secondary teacher training, as well as vocational teacher training. The results of the search on teacher education in the Ortelius Database are shown in the following table.

Table 5. Breakdown by country of the results of the search on teacher education in the Ortelius Database.

Country	No. of teacher training institutions
Austria	27
Belgium	74
Denmark	48
Finland	14
France	38
Germany	88
Greece	8
Ireland	18
Italy	27
Luxemburg	2
The Netherlands	39
Portugal	39
Spain	45
Sweden	19
United Kingdom	131
<i>Total:</i>	<i>617</i>

Of the 617 listed teacher training institutions, 323 clearly indicated that they did not provide vocational teacher training, and were for that reason not addressed. In order to ascertain if the other 294 institutions were, or were not, engaged in vocational teacher training, it was decided that they would be addressed with a questionnaire and accompanying letter. An account of the results of the questionnaires is given under the section 3.2.2 *Questionnaires to teacher training institution in the Member States*.

3.1.5 The ARBLINE – Bibliographic Database on Occupational Health and Working Life

The Swedish National Institute for Working Life incorporates a national resource library on occupational health and working life that contains 50 000 references. A database search was made in this bibliographic database – ARBLINE – using the keywords distance and/or education and training that provided useful references on literature published by education theorists and practitioners. The literature review resulted in a comprehensive correspondence with

organizations dealing with open and distance learning and/or health and safety matters, the results of which are accounted for under section 3.3 *Other sources*.

3.2 Questionnaires

3.2.1 Questionnaires to the Ministries of Education in the Member States

To get an overview of the Member States' national education systems, a questionnaire was sent out to the Ministries of Education in the Member States. The questions put were:

1. Is there a national educational programme for upper secondary teachers?
2. Is there a national educational programme for vocational teachers?
3. Is teacher training offered at a distance?
4. Is health and safety included in the curriculum of teachers?
5. Is occupational safety and health included in the curriculum of teachers?
6. Is occupational safety and health included in the curriculum of students?

Of the 15 Member States, eight completed and returned the questionnaire within the requested time. A reminder was sent to those Ministries of Education that had not responded, which resulted in three more replies. The results are shown in the following table.

As shown in table 6, six countries have a national educational programme for upper secondary trainee teachers, and five also have a national educational programme for trainee vocational teachers. Four countries offer part of their teacher training at a distance for upper secondary trainee teachers, and five for vocational teachers. Health and safety is included in the curriculum of upper secondary trainee teachers in nine countries, and in the curriculum of vocational teachers in seven. Occupational safety and health is included in the curriculum of upper secondary student teachers in three countries, and in the the curriculum of vocational student teachers in six.

Table 6. Results of the questionnaires on national education systems to the Ministries of Education in the Member States.

Questionnaire on national educational programmes		Denmark	Finland	Germany	Greece	Italy	Luxembourg	Netherlands	Portugal	Spain	Sweden	United Kingdom
<i>Teachers</i>												
Is there a national educational programme in your country for teachers in...?												
<i>upper secondary schools</i>												
<i>vocational education/training centres</i>												
Is some part of the teacher training organized in the form of Open and Distance Education for teachers in...?												
<i>upper secondary schools</i>												
<i>vocational education/training centres</i>												
Does the teacher training in your country include some component of Health and Safety?												
<i>upper secondary schools</i>												
<i>vocational education/training centres</i>												
Does the teacher training in your country include some component of Occupational Health and Safety?												
<i>upper secondary schools</i>												
<i>vocational education/training centres</i>												
<i>Students</i>												
Is occupational safety and health included in the curriculum of students?												
<i>upper secondary school</i>												
<i>vocational education/training centres</i>												

*Y=Yes, N=No.

As shown in table 6, occupational safety and health is included in the curriculum of upper secondary schools in seven countries, and in vocational training programmes in nine countries.

The questionnaire also explored the interest in a distance taught course in occupational safety and health for upper secondary/vocational teachers in the Member States. To the question “Would there be an interest in an open and distance education in occupational safety and health in your country?”, four countries answered in the affirmative for upper secondary teachers, and for vocational teachers six countries answered yes to the question. The results are shown in the following table.

Table 7. Overview of replies to the question “Would there be an interest in your country in an Open and Distance Education in Occupational Health and Safety for teachers?”

	upper secondary schools	vocational education/ training centres
Denmark	No	No
Finland	Yes	Yes
Germany	No	No
Greece	Yes	Yes
Italy	No	Yes
Luxemburg	Yes	Yes
Netherlands	No	No
Portugal	Yes	Yes
Spain	No	Yes
Sweden	No	No
United Kingdom	No	No

3.2.2 Questionnaires to teacher training institutions

To ascertain whether the curriculum of vocational teachers contained the subject occupational safety and health and whether part of the training was taught at a distance, a questionnaire was sent to a total of 314 teacher training institutions in the Member States. The questionnaire also explored the institutions’ interest in running a distance taught course in occupational safety and health for vocational teachers.

The mailing list was based on the results of the searches made in the Ortelius Database, and the supplementary searches in Yahoo’s

regional country registers – particularly necessary in the case of Greece, where only pre-primary and primary teacher training were listed in the ORTELIUS Database. (See section 3.1.4 *The ORTELIUS – Database on Higher Education in the Member States*).

Up to now, 56 questionnaires have been completed and returned, the number per country as shown in the following table.

Table 8. Breakdown by country of the number of addressed and responding teacher training institutions in the Member States found in the Ortelius Database.

Country	Addressed	Replies	Replies (%)
Austria	20	5	25
Belgium	20	2	10
Denmark	32	6	19
Finland	6	3	50
France	34	0	0
Germany	25	10	40
Greece*	20	3	15
Ireland	13	3	23
Italy	14	0	0
Luxemburg	2	0	0
The Netherlands	22	2	9
Portugal	25	4	16
Spain	30	1	3
Sweden	12	6	50
United Kingdom	39	11	28
<i>Total:</i>	<i>314</i>	<i>56</i>	<i>18</i>

*Found in Yahoo’s regional country register.

Of the 56 responding teacher training institutions, 25 provide a vocational teacher training programme that includes ODL and/or OSH in the curriculum. Of these 25 institutions, 14 offer part of the training at a distance, 16 include the subject occupational safety and health in the curriculum, and six offer ODL as well as OSH in their vocational teacher training programmes. The results are shown in table 9.

The returned questionnaires also indicated the level of interest of the responding institutions in a distance taught course in occupational safety and health for vocational teachers. Of the 56 responding institutions, 25 answered in the affirmative to the

Table 9. Breakdown by Member State of the responding teacher training institutions found in the Ortelius Database providing a vocational teacher training including ODL and/or OSH in the curriculum.

Country	ODL	OSH
<i>Austria</i>		
Federal College for Technical and Vocational Teacher Training, Graz	-	x
College for Teacher Training of the Diocese of Innsbruck	-	x
<i>Belgium</i>		
University Faculties of Notre-Dame de la Paix, Namur	x	-
Provincial School of Higher Education Limburg, Hasselt	-	x
<i>Denmark</i>		
N. Zahls College of Education, Copenhagen	x	-
DLH Aalborg College of Education, Aalborg	x	-
The Royal Danish School of Educational Studies, Copenhagen	x	x
Hjoerring College of Educator Training, Hjoerring	x	-
<i>Finland</i>		
University of Helsinki	x	x
University of Tampere	x	-
<i>Germany</i>		
Humboldt-Universität zu Berlin, Berlin	-	x
Otto-Friedrich Universität, Bamberg	x	x
Bildungswissenschaftliches Universität, Flensburg	-	x
University of Kaiserlautern	x	-
Heinrich-Heine-Universität Düsseldorf, Düsseldorf	-	x
<i>Greece*</i>		
Technological Educational Institute of Patras	-	x
<i>The Netherlands</i>		
CHN North Netherlands, Leeuwarden	x	-
<i>Portugal</i>		
Higher School of Education Jean Piaget of North-East, Macedo de Cavaleiros	-	x
<i>Sweden</i>		
Linköping University	x	x
Lund University	x	-
Uppsala University	x	x
Stockholm Institute of Education	-	x
<i>United Kingdom</i>		
Edge Hill University College, Ormkirk	x	x
Swansea Institute of Higher Education, Swansea	-	x
University of Wales, Swansea	-	-

ODL = Open and Distance Learning, OSH = Occupational Safety and Health. * Found in Yahoo's regional contry register.

question “Would there be an interest at your institute in an open and distance education in occupational safety and health for vocational teachers?” The results are shown in table 10.

Tabel 10. Addressed and responding teacher training institutions found in the Ortelius Database that declare an interest in a distance taught course in occupational safety and health for vocational teachers.

Country	Interest	Level
<i>Austria</i>		
Federal College for Technical and Vocational Teacher Training, Graz	x	b
College for Teacher Training of the Diocese of Innsbruck	x	b
College for Teacher Training of the Diocese of Stams	x	b
<i>Belgium</i>		
Provincial School of Higher Education Limburg	x	b & c
<i>Denmark</i>		
DLH Aalborg College of Education	x	b
<i>Finland</i>		
University of Helsinki	x	b & c
<i>Germany</i>		
Humboldt-Universität zu Berlin	x	c
Otto-Friedrich Universität, Bamberg	x	b
University of Kaiserslautern	x	c
Heinrich-Heine-Universität Düsseldorf	x	b & c
Otto-von-Guericke University of Magdeburg	x	b & c
University of Leipzig	x	b
<i>Greece*</i>		
Technological Educational Institute of Patras	x	b
Technological Educational Institute of Halkis	x	b & c
<i>Ireland</i>		
University of Limerick	x	b & c
<i>The Netherlands</i>		
CHN North Netherlands, Leeuwarden	x	b
<i>Portugal</i>		
Higher School of Education Jean Piaget of North-East	x	b & c
Higher School of Education of Beja	x	b & c
University of Acores, Dept. of Sciences of Education	x	b & c
<i>Sweden</i>		
Linköping University	x	b
Lund University	x	b
Uppsala university	x	b & c
Stockholm Institute of Education	x	b
<i>United Kingdom</i>		
Edge Hill University College, Ormskirk	x	b & c
University of Wales, Swansea	x	c

b = basic c = continuing * Found in Yahoo's regional country register.

Of these 25 institutions – as table 10 shows – eleven are primarily interested in a basic course, three in a continuing course, whereas eleven are interested in both a basic and a continuing distance taught course in occupational safety and health. The interest is spread over the responding countries and – with the exception of the non-responding countries France, Luxemburg and Italy – Spain is the only country that did not indicate any interest in such a course.

The reader interested in more details concerning the above mentioned 25 institutions is advised to consult Appendix 4: *Questionnaires – List of addressed and replying institutions declaring an interest in an ODL OSH course for vocational teachers.*

3.2.3 Questionnaires to vocational training institutions

The CEDEFOP has published a series of monographs entitled *Vocational Education and Training in the Member States*. The series describe the vocational training systems in the Member States, and the publications include lists of addresses to relevant vocational training institutions and bodies to be approached for further information. The series were consulted as a part of this study and the monographs on Germany, Belgium, Greece, France, Italy, Luxemburg, the Netherlands, Portugal, Spain and Austria were reviewed. The monographs on Denmark, Ireland and the United Kingdom were, unfortunately, out of print and could not be ordered, and monographs on Sweden and Finland have not yet been published. The reader interested in more details of the structures of vocational training in the Member States, is advised to consult the monographs of the CEDEFOP.

The information gained from the monographs, gave addresses to 52 vocational training institutions and bodies in the Member States, which were sent a questionnaire. The aim was to look into the educational background of vocational teachers at these training institutions, particularly if; 1. they have been trained in the subject occupational safety and health, and; 2. some part of their training was offered at a distance. The questionnaire further explored the interest in a distance taught course in occupational safety and health for vocational teachers. The number of voca-

tional training institutions in the Member States and the number of replies are shown in the following table.

Table 11. Number of addressed and responding vocational training institutions found in the CEDEFOP's monographs by country.

Country	Addressed	Replies	Replies (%)
Belgium	2	0	
Finland	36	8	
France	1	0	
Germany	2	1	
Greece	3	1	
Italy	2	0	
The Netherlands	1	1	
Portugal	2	0	
Spain	3	0	
<i>Total:</i>	<i>52</i>	<i>11</i>	<i>21</i>

Of the eleven institutions that completed and returned the questionnaire, three stated that the training of the vocational teachers at their institution partly is offered as open and distance learning, and three others stated that training including some component of occupational safety and health is provided. Five of the addressed institutions express an interest in a distance taught course in occupational safety and health for vocational teachers. The results are shown in table 12.

The Internet was used as a complement to gain information on vocational training institutions, and the search services of Euroseek, Alta Vista and Yahoo were consulted. Based on information gained from Yahoo's regional country registers, 33 more questionnaires were sent out to vocational training institutions in the Member States, geographically divided as shown in table 13.

Of the six institutions that completed and returned the questionnaire, two indicated that the training of vocational teachers at their training centre partly is offered as open and distance learning, and three that the training includes an occupational safety and health component. Two of the addressed institutions expressed an interest in a distance taught course in occupational safety and health for vocational teachers. The results are shown in table 14.

Table 12. Breakdown by country of vocational training institutions in the Member States found in the CEDEFOP's monographs that provide OSH and/or ODL courses.

Country	ODL	OSH	Interest
<i>Finland</i>			
The Diacona Institute for Higher Education	x	x	x
Oulu Polytechnic	x	-	-
Helsinki Polytechnic	-	-	-
Turku College of Art and Design & Health and Social Care	x	-	x
Silinjärvi College	-	-	-
Pirkanmaa Polytechnic	-	-	-
Swedish Polytechnic Finland	-	-	-
<i>Greece</i>			
Technical and Vocational Teacher Training Institute	-	x	x
<i>The Netherlands</i>			
Nova College	-	-	x
<i>Germany</i>			
Hessisches Kultusministerium	-	x	x
<i>Total:</i>	3	3	5

Table 13. Addressed vocational training institutions in the Member States by country listed in Yahoo.

Country	Addressed	Replies	Replies (%)
Austria	10	1	
Denmark	9	3	
The Netherlands	14	2	
<i>Total:</i>	33	6	18

Table 14. Breakdown by country of addressed and responding vocational training institutions in the Member States listed in Yahoo providing OSH and/or ODL courses.

Country	ODL	OSH	Interest
<i>Austria</i>			
Berufsschule Linz	-	-	-
<i>Denmark</i>			
Industri og Håndværkerskolen	x	x	x
King William College	-	x	x
Copenhagen College of Laboratory Science	x		-
<i>Netherlands</i>			
Beder Gartnerskole	-	x	-
VEV Vocational Training	-	-	-
<i>Total:</i>	2	3	2

3.3 The Internet

The Internet searches led to the identification of the following networks.

1. ANDREA – the Network for Distance Education Reporting from European Activities,
2. CRE – the Association of European Universities,
3. EDEN – the European Distance Education Network,
4. EOUN – the European Open University Network,
5. EURYDICE – the Information Network on Education in Europe,
6. TEN – the Trans-European Tele-Education Network.

The Network for Distance Education Reporting from European Activities – *ANDREA* – is hosted by NKI Distance Education, Norway. *ANDREA* was established in co-operation with the EDEN and has a formal agreement with the Internet International Council for Distance Education. *ANDREA* is an electronic newsletter for European distance educators with about 650 subscribers. The newsletter supplies information on national activities in the field to the people of Europe. The network’s aim is to distribute information and facilitate communication among its members.

The Association of European Universities – *CRE* – comprises more than 500 universities or equivalent institutions of higher education status in more than 39 countries. It is a non-governmental organization and provides a forum for discussion on matters related to higher education in which – being a non-governmental organization – it represents the universities' point of view.

The European Distance Education Network – *EDEN* – is hosted by the Open University, the United Kingdom. EDEN has a membership of over 70 institutions and 300 individuals, and its objectives are to promote exchange of information, facilitate networking and enhance professional development. EDEN publishes a regular printed newsletter, as well as an electronic newsletter.

The European Open University Network – *EOUN* – is hosted by the European Association of Distance Teaching Universities (EADTU) at the Open University, the Netherlands. The EOUN works closely with the EADTU, whose mission is to promote and support the creation of a European network for higher level distance education. The aim of EOUN is to improve the opportunity for individuals and organizations to benefit from high quality Open Distance Learning programmes from across Europe.

The European Information Network on Education – *EURYDICE* – provides information on education policies at EU and national levels, as well as on the national education systems. Its aim is to promote the exchange of information and experience between policy makers and, in general, to provide information to all those involved in the field of education. The network is organized at two levels; the national units established by the Ministries of Education that regularly updates the information, and a European unit set up by the European Commission. Apart from providing information on the European Union, the network also covers the EFTA, the Central and Eastern European countries, and Cyprus. EURYDICE disseminates information via its publications and comparative studies, as well as via its database on education – *EURYBASE* – open to the public and easy to access via its Web site. The database describes the education policies and systems at EU and national level, and is complemented by bibliographies, directories of institutions and information on national legislation.

The Trans-European Tele-Education Network – the *TEN Project Consortium* – consists of fifteen partners from eight different countries. Five of the fifteen are Contractors with the Commission and the others are Associated Contractors to one of the previous five Contractors. The aim of the TEN project is to experiment the concept of “Real-Time Virtual Classroom”. It covers six European countries and is based on an integrated satellite terrestrial network.

This method proved to be unproductive as a means of finding information that literally matches the area of interest to this study, that is, courses that *combine* all three of the following criteria: occupational safety and health; distance education; and vocational teacher training. Therefore, the Internet was primarily used to further explore, check and update information on training institutions and courses that already had been gained elsewhere. This especially applies to the search engine Yahoo. Based on information gained on teacher training in Yahoo’s regional country register, a questionnaire was sent to 20 teacher training institutions in Greece, the results of which are accounted for in section 3.2.2 *Questionnaires to teacher training institutions in the Member States*. Furthermore, 33 vocational training institutions in the Member States were addressed with a questionnaire and accompanying letter in accordance with data obtained from Yahoo. These results are accounted for in section 3.2.3 *Questionnaires to vocational training institutions*.

3.4 Other sources

A total number of 56 organizations were addressed with a letter asking for information on their training activities. Organizations addressed were open universities, distance education associations and centres, universities and university colleges with open learning programmes, institutes providing training in (occupational) safety and health, and national bodies dealing with health and safety matters. The number of organizations addressed by category and country is shown in table 15.

Of the 56 addressed organizations, 24 replied to the request for information, whereof two provide training that fulfil all three of the criteria asked for. These are Uppsala University, Sweden, and Technische Fachhochschule, Berlin, Germany, that were asked to

Table 15. Breakdown by category and country of organizations addressed.

Country	No. of addressed organizations	Open University	Distance Education Association	Distance Education Centre	University*	University College	Technical College	OSH training institute	National Board of OSH	Other
Austria	2			1					1	
Belgium	7	1							1	5
Finland	8		1	2	5					
France	8			2	2				2	2
Germany	2	1		1						
Greece	2				1					
Ireland	1					1				
Italy	1		1							
The Netherlands	4	1	1					2		
Spain	10	2						2	1	5
Sweden	11				8	2	1			
<i>Total:</i>	<i>56</i>	<i>5</i>	<i>3</i>	<i>6</i>	<i>16</i>	<i>3</i>	<i>1</i>	<i>4</i>	<i>5</i>	<i>12</i>

* The results are treated separately from the results based on database searches and questionnaires.

complete a questionnaire. The number of replies as to category and country is shown in table 16.

Of the responding *open universities* – the Studiententrum Open Hoger Onderwijs, Brussels, Belgium, the German Fernuniversität in Hagen, Germany, the Open University in Heerlen, the Netherlands, and the Universitat Aberta de Catalunya, Spain – no one provides courses that match the inquiry. The Open University in Milton Keynes, United Kingdom, and the Universidade Aberta in Lisbon, Portugal were not addressed with an official letter, since both of them have their representatives on the project conducting

Table 16. Breakdown of responding organizations by category and country.

Country	Open University	Distance Education Association	Distance Education Centre	University	University College	Technical College	OSH Training Institute	National Board of OSH	Other	Total
Belgium	1								1	
Finland				1						
France			1	1				1		
Germany	1					1				
Greece				2						
Ireland					1					
Netherlands	1						1		1	
Spain	1							1	1	
Sweden				5		2				
<i>Total</i>	4	0	1	9	1	3	1	2	3	24

the study. Neither, however, provide distance taught courses in occupational safety and health targeted at vocational teachers.

The one responding *distance education centre* – Centre National d’Enseignement a Distance (CNED) in France – provides continuing education for vocational teachers taught at a distance but not in the subject occupational safety and health.

Of the responding *universities*, the majority deliver training that satisfy one or two of the relevant criteria, that is: 1) occupational safety and health; 2) open and distance learning; and 3) vocational teachers. Nevertheless, only one institution provides training that combines all three elements; the Consortium for Distance Education, hosted by the University of Uppsala, Sweden. The consortium offers continuing education for vocational teachers as part of an open learning programme in which occupational safety and health is included as a component.

Of the replying *technical colleges*, the Technische Fachhochschule Berlin, Germany, provides training courses in occupational safety and health for vocational teachers, as basic as well as continuing education. The continuing education course is offered at a distance, while the basic education is not. Another interesting example is the University College of Dublin, Ireland, that runs a distance taught course in occupational safety and health leading up to a university college certificate. The course, however, is not targeted at vocational teachers, but at managers and safety representatives. The Technical College of Lund, Sweden, plans to develop a course in occupational safety and health as part of a programme for in-service training of teachers in vocational training programmes, however not distance taught. In Finland the University of Helsinki, the Research and Training Centre, provides distance taught courses – basic as well as continuing – for vocational teachers, but not in the subject occupational safety and health. In Greece, the University of Thessaly provides training for vocational teachers, but not as an open learning programme, nor including the subject occupational safety and health.

The two replying National Boards of Occupational Safety and Health – the National Institute for Research and Safety (INRS) in France and the National Institute of Occupational Safety and Health (INSHT) in Spain – provide distance taught training in safety and health matters, targeted at managers and safety representatives. The course material they both use is produced by the INRS, but adapted to local conditions in Spain by the INSHT.

Of the other eleven replying organizations, none provides training that includes any of the three criteria asked for, and will for these reasons not be commented on here.

The reader with relevant interests can order a complete list of organizations addressed within the framework of this study from the Swedish National Institute for Working Life, Department of Occupational Medicine – Appendix 5. *List of institutions addressed within the framework of the study Occupational Safety and Health Education of Teachers. An Investigation into the Member States.* The appendix has not been included in the study from considerations of space.

Table 17. Questionnaires: Addressed and responding institutions – overview replies.

	Austria	Belgium	Germany	Denmark	Spain	Finland	Greece	Ireland	The Netherlands	Portugal	Sweden	United Kingdom	Total
Number of replies:	6	2	12	8	1	11	5	3	6	4	8	11	77
Questions:													
Is there a training programme at your university/institute for vocational teachers in..													
<i>basic education</i>	4	2	8	3	1	4	3	1	4	2	5	4	41
<i>continuing education</i>	1	2	6	2	0	5	2	1	1	4	5	6	35
Is some part of that training organized in the form of Open and Distance Learning ?													
<i>basic education</i>	0	1	1	3	0	4	0	0	1	0	3	0	13
<i>continuing education</i>	0	1	2	2	0	4	0	0	1	0	4	1	15
Does the training include some component of Health and Safety?													
<i>basic education</i>	4	1	4	4	1	2	1	2	3	1	4	2	29
<i>continuing education</i>	1	0	4	0	0	2	0	0	0	1	1	3	12
Does the training include some component of Occupational Health and Safety ?													
<i>basic education</i>	2	1	4	3	0	2	2	0	2	1	3	1	21
<i>continuing education</i>	1	0	4	0	0	1	1	0	0	1	2	2	12

3.5 Summary of the results

In this study a total of 437 questionnaires – all categories but the questionnaires to the Ministries of Education included* – were sent and 77 replies obtained, giving a response rate of 17 per cent. Of the responding institutions, 41 provide basic education for vocational teachers, and 35 continuing education. Thirteen of the institutions provide ODL courses at a basic level, and 15 in their continuing education. As regards training in OSH, 21 of the institutions answered that it is included in their basic education, and 12 that it is included in their continuing education. The results are summarized in table 17.

Of the 77 responding institutions, ten already run training courses that meet all three of the criteria required for in this study, namely distance taught courses in occupational safety and health for vocational teachers. These institutions are shown in the following table.

Table 18. Breakdown by country of training institutions – all categories covered by this study – providing ODL OSH courses for vocational teachers.

Denmark

The Royal Danish School of Educational Studies, Copenhagen
Industri og Håndværkerskolen Nykøping Falster

Finland

University of Helsinki
The Diacona Institute for Higher Education, Helsinki

Germany

Otto-Friedrich Universität, Bamberg
Technisch Fachhochschule, Berlin

Sweden

Linköping University
Uppsala University
The Consortium for Distance Education, Uppsala University

United Kingdom

Edge Hill University College, Ormskirk

* The results are summarized in section 3.2.1 *Questionnaires to the Ministries of Education*

Six of these institutions were found in the ORTELIUS Database (see table 9), one via the series of monographs on vocational training in the Member States published by the CEDEFOP (see table 12), one in the regional country register of Yahoo (see table 14) and, finally, two via correspondence (see 3.4 *Other sources*).

The questionnaires also explored the addressed institutions' interest in a distance taught course in occupational safety and health for vocational teachers. Of the 77 responding institutions, 34 (44 per cent) declared an interest in such a course. Of these, 41 per cent are primarily interested in a basic education course, and 18 per cent in a continuing education course, whereas 41 per cent are interested in courses at both levels. The interest is spread over the Member States and – with the exception of the non-responding countries France, Luxemburg and Italy – Spain is the only country that did not indicate any interest in such a course. The results are summarized in table 19.

The reader interested in details on these responding institutions, is advised to consult Appendix 4. *List of addressed and responding institutions declaring an interest in an ODL OSH course for vocational teachers*.

The results of the questionnaires sent to the Ministries of Education in the Member States are – as already mentioned – treated separately. However, as table 7 shows, of the eleven responding Ministries of Education, four declared an interest in a distance taught course in occupational safety and health for upper secondary teachers, and six countries for vocational teachers.

Apart from the questionnaires, 85 letter with a request for information on institutions' training activities were sent out, and 51 replies obtained. These results are accounted for under the sections 3.1.2 *The ICDL-DED – International Centre for Distance Learning Database*, and 3.4 *Other Sources*.

Table 19. Questionnaires: Institutions declaring an interest in ODL OSH course for vocational teachers – overview replies.

	Austria	Belgium	Germany	Denmark	Spain	Finland	Greece	Ireland	The Netherlands	Portugal	Sweden	United Kingdom	Total
Number of replies:	6	2	12	8	1	11	5	3	6	4	8	11	77
Number of affirmative replies:	3	1	7	2	0	3	4	1	3	3	5	2	34
Would there be an interest at your university/institute in an Open and Distance Education in Occupational Health and Safety for vocational teachers?													
<i>Basic education</i>	3	0	2	2	0	0	1	0	2	0	3	0	13
<i>Continuing education</i>	0	0	2	0	0	2	0	0	0	0	1	1	6
<i>Both</i>	0	1	3	0	0	1	3	1	1	3	1	1	15

4. Conclusion

The scope of this study is wide ranging. The study does not claim to be comprehensive, and although every effort has been made to include the most significant activities undertaken by the Member States in the field, we are aware there may be significant omissions. It has not been possible, in the time allocated for this study, to be confident that all the potential providers of distance taught courses in occupational safety and health have been contacted. The study is therefore only an indication of the status of occupational safety and health training for vocational teachers in Europe.

At the outset of the study it was intended that the major tools for the investigation would be a number of well-established databases. These, however, proved to be largely unproductive for this particular study. The different databases consulted contain information on one or two of the three criteria on which data was sought for, but very little training was found that *combined* all three of the elements (see table 17 and 18).

Problems that have been encountered during the work with searching the databases were, in the case of the *CEDEFOP Database*, that the batch service only gave results for nine of the 15 Member States (see table 1). Further, of the 190 results given, 155 referred to France, and the data for some countries had not been satisfactory updated. This raises doubts about the reliability of the data and the possibility of making comparisons between the countries.

The *ICDL-DED Database* proved to be oriented towards the British Commonwealth, and the results did not allow for an assessment of existing training in the field in the Member States. Out of the 364 results in the first search, 183 referred to countries outside of Europe. The database search gave many hits – 180 – on the United Kingdom, but only one referring to other EC countries (see table 2). The results for the United Kingdom obtained in the second search (see table 3), indicate that although there is a

significant number of providers of occupational safety and health training in the United Kingdom, the courses are not directed towards the targeted audience of this study – vocational teachers.

The *ORTELIUS Database* was thoroughly explored via a personal password that allowed for numerous searches. However, the data available records the institutional structure of the education system, but does not indicate what careers the students follow after they have qualified. It was therefore not possible to draw any conclusions relating to the questions addressed by this study simply by searching the database. Complementary work with questionnaires was necessary.

Questionnaires was the other major tool used in this study for seeking information on potential providers of ODL OSH training for vocational teachers. A total of 437 questionnaires were sent to teacher and vocational training institutions, see table 17 for a summary of the results. Because of the the low response rate – 17 per cent – and the fact that it is not possible to be confident that all the potential providers of distance taught courses in occupational safety and health had been contacted, the results are merely an indication of the state of the field. The low response rate can partially be explained, because of the generalized questions in the questionnaires could not always be matched to the specific situations in the Member States. There is a wide variety of systems and structures of vocational education offered, and the background of vocational teachers varies. There are many different categories of trainers and professionals who instruct people in this field across the EU and, in some cases, within the individual Member State. There are also many routes into the profession, not all of them via the official education system. Consequently, broad, general questions had to be asked. International comparisons are therefore difficult to make since the vocational teacher training systems differ so widely, and there are no systematic studies which is evident from the absence of recognised or accepted definitions which could serve as common points of reference in a study covering several countries. However, of the responding institutions 44 per cent declared an interest in a distance taught course in occupational safety and health for vocational teachers (see table

19). There is, therefore, a potential need for the development of training courses and educational material in the field.

The results of the *questionnaires to the Ministries of Education*, see table 6, indicate that there are discrepancies between the curriculum of trainee teachers and their students in the subject of occupational safety and health education. Occupational safety and health is included in the curriculum of upper secondary teachers in three countries, and in the curriculum of vocational teachers in six, whereas it is included in the curriculum in upper secondary schools in seven countries, and in vocational training programmes in nine countries. A fact that stresses the potential need for the development of training courses and educational material in occupational safety and health specifically designed for teachers.

Our aim is that the study will be disseminated, and serve as a starting point of a European Network of organizations operating in the field. We hope the responding institutions in the study indicating an interest in an ODL OSH course might serve as a basis for – and play a vital role – in this networking.

5. Further work

At the outset of the study it was intended that the major tools for the investigation would be a number of well-established databases. These, however, proved to be largely unproductive for this particular study. Any future extensions of the study should therefore review data collection methods because of the limited value of the databases used in the study.

Bearing that in mind, it would be interesting to make a literature review of the series of monographs on *Teachers and Trainers in Vocational Training* that is being published by the CEDEFOP. So far a volume on Italy, Ireland and Portugal has been published, and another one on Germany, Spain, France and the United Kingdom. During 1997 two new monographs were planned to be published and thereby the series on the Member States will be complete.

The monographs describe teachers and trainers in initial vocational training in the Member States; the different types of teachers and trainers, their training paths, the training facilities provided for the continuing and further education of these groups etc. in the respective countries. The monographs also include lists of addresses with a view of signposting structures and organizations that can provide information. There are pointers to national educational documentation libraries, educational databases, directories, registers, catalogues and networks. References are also made to training schemes that include educational software and distance methods, and to national open and distance training programmes for the continuing training of teachers.

This work, if undertaken, might provide data on the training of teachers in vocational settings, and could therefore be included in a future extension of this study.

It would also be of interest to follow up more closely the contacts with the Ministries of Education in the Member States. To further look into the national teacher training programmes that include the subject occupational health and safety in the curricula, should provide information on national initiatives in the field.

6. Summary

Elisabet Hagberg Batel. Open and Distance Learning. Occupational Safety and Health Education of Vocational Teachers. An Investigation into the Member States; *Arbetslivsrapport* 1998:17.

This study examines the training of teachers in the European Union in the subject occupational safety and health as part of an open and distance learning programme. It addresses upper secondary school teachers and teachers in vocational training settings. The main tools for data collection have been a number of well-established databases, and questionnaires to training institutions of relevance to this study, as well as to the Ministries of Education in the Member States. As a supplement the Internet has been used as a source of information. A total number of 437 questionnaires to teacher and vocational training institutions were sent and 77 replies obtained giving a response rate of 17 per cent. Of the 77 responding institutions, 34 (44 per cent) declare an interest in a distance taught course in occupational safety and health designed for vocational teachers. Of these, 41 per cent are primarily interested in a basic education course, and 18 per cent primarily in a continuing education course, whereas 41 per cent are interested in courses at both levels. Apart from questionnaires, 85 letters with a request for information on institutions' training activities were sent out, and 51 replies obtained. Because of the intensive scope of the aims of the study and the limited time to conduct the work, the study is inevitably not comprehensive, but it is an indication of the status of occupational safety and health training for teachers in the Member States. But, subject to that proviso, very little training has been found that is directed towards the target audience of the study.

Key words: Teachers, vocational education and training, occupational safety and health training, open and distance learning.

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- mission, DGXXII: Education, Training and Youth. Brussels, 2 ed. 1995.
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 16. Doerfert F (ed.) Short descriptions of selected distance-education institutions. Zentrales Institut für Fernstudienforschung, Hagen, 1989.
 17. EURYDICE, the Education Information Network in the European Union and the EFTA/EEA Countries. In-service training of teachers in the European Union and the EFTA/EEA Countries. EURYDICE, European Unit, Brussels, 1995.
 18. Funell P, Müller D. Vocational Education and the Challenge of Europe. Responding to the Implications of the Single European Market. Kogan Page Limited, London, 1991.
 19. Harry K (compiled). Distance Education in Western Europe: a selective annotated bibliography of current literature. CEDFOP, European Centre for the Development of Vocational Training, Berlin, 1 ed. 1985.
 20. Holmberg B. A bibliography of writings on distance education. Zentrales Institut für Fernstudienforschung, Hagen, 1990.
 21. Mood T A. Distance education: an annotated bibliography. Libraries Unlimited, Colorado, 1995.
 22. OECD. Education at a glance. OECD Indicators. Organization for Economic Co-Operation and Development, Paris, 1996.
 23. Rocha Trindade A. Distance Education for Europe. Universidade Aberta, Lisbon, 2 ed. 1992.
 24. Rumble G, Oliveira J eds. Vocational Education at a Distance: international perspectives. Kogan Page, London, 1992.
 25. UNESCO and the International Bureau of Education. Study Abroad 1996 – 1997. XXIXth ed. UNESCO, Paris, 1995.
 26. Utbildningsdepartementet. Långt borta och mycket nära – En förstudie om svensk distansutbildning. DS 1992:3, Stockholm, 1992.
 27. Utbildningsdepartementet. Höj Ribban! Lärarkompetens för yrkesutbildning. SOU 1994:01, Stockholm, 1994.
 28. Weinham G F. University level distance education in Europe: assesment and perspectives; proceedings of a workshop jointly initiated and organized by FernUniversität and EADTU. Hagen, 1996.

Appendix 1–3. Questionnaires

Questionnaire

	Upper secondary schools		Vocational education/ training centres		Your comments
	Yes	No	Yes	No	
1. Is there a national educational programme in your country for teachers in...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
2. Is some part of the teacher training organized in the form of Open and Distance Education for teachers in...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
3. Does the teacher training in your country include some component of Health and Safety?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
4. Does the teacher training in your country include some component of <i>Occupational Health and Safety</i> ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
5. Would there be an interest in your country in an Open and Distance Education in Occupational Health and Safety for teachers in...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
6. Do you know of some institute or university that organizes Health and Safety Education for teachers in	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
7. Is Occupational Health and Safety included in the curriculum of <i>students</i> in...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
8. At what level is teacher training offered in your country?		1 <input type="checkbox"/> Bachelor		1 <input type="checkbox"/> Bachelor	
		2 <input type="checkbox"/> Masters		2 <input type="checkbox"/> Masters	
		3 <input type="checkbox"/> Postgraduate		3 <input type="checkbox"/> Postgraduate	

(The full name of your university/institute)

(The full address including postal code)

(Contact person)

(Telephone to the contact person)

(Telefax)

(E-mail address)

Please forward any written material you hold - in English or your native language - on teacher training, subjects taught, course guides, course content etc. that could be of interest to this study.

Questionnaire

	Basic education		Continuing Education		Your comments
	Yes	No	Yes	No	
1. Is there a training programme at your university/ institute for vocational teachers in...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
If so:					_____
2. Is some part of that training organized in the form of Open and Distance Learning?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
3. Does the training include some component of Health and Safety?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
4. Does the training include some component of Occupational Health and Safety ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
5. Would there be an interest at your university/institute in an Open and Distance Education in Occupational Health and Safety for vocational teachers...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
6. Do you know of any other university/ institute that organizes Health and Safety Education for vocational teachers in	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
7. At what level do you offer training for vocational teachers at your university/institute?	1 <input type="checkbox"/> Bachelor		1 <input type="checkbox"/> Bachelor		
	2 <input type="checkbox"/> Masters		2 <input type="checkbox"/> Masters		
	3 <input type="checkbox"/> Postgraduate		3 <input type="checkbox"/> Postgraduate		

(The full name of your university/institute)

(The full address including postal code)

(Contact person)

(Telephone to the contact person)

(Telefax)

(E-mail address)

Please forward any written material you hold - in English or your native language - on teacher training, subjects taught, course guides, course content etc. that could be of interest to this study.

Questionnaire

	Basic education		Continuing Education		Your comments
	Yes	No	Yes	No	
1. Is there a training programme at your university/ institute for vocational teachers in... If so:	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
2. Is some part of that training organized in the form of Open and Distance Learning?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
3. Does the training include some component of Health and Safety?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
4. Does the training include some component of Occupational Health and Safety ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
5. Would there be an interest at your university/institute in an ODL course in Occupational Health and Safety for vocational teachers...	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
6. Do you know of any other university/ institute that organizes Health and Safety Education for vocational teachers in	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
7. At what level do you offer training for vocational teachers at your university/institute?	1 <input type="checkbox"/> Bachelor		1 <input type="checkbox"/> Bachelor		
	2 <input type="checkbox"/> Masters		2 <input type="checkbox"/> Masters		
	3 <input type="checkbox"/> Postgraduate		3 <input type="checkbox"/> Postgraduate		

(The full name of your university/institute)

(The full address including postal code)

(Contact person)

(Telephone to the contact person)

(Telefax)

(E-mail address)

Please forward any written material you hold - in English or your native language - on teacher training, subjects taught, course guides, course content etc. that could be of interest to this study.

Appendix 4

List of addressed and replying institutions declaring an interest in an ODL OSH course for vocational teachers.

The appendix refers to the addressed and *replying* institutions within the framework of the study. The interested reader can order a complete list of all the *addressed* organizations from the Swedish National Institute for Working Life, Department of Occupational Medicine: Appendix 6: *List of institutions addressed within the framework of the study Occupational Safety and Health Education of Vocational Teachers. An Investigation into the Member States.*

Finland

The Diacona Institute of Higher Education
Helsinginkatu 31
00500 Helsinki
Tel: + 358 9 775 09 620
Fax: + 358 9 726 10 92

Temporär Yrkeshögskola
Sydväst
Nunnegatan 4
20 100 Åbo
Tel:+ 358 21 231 11 22
Fax: + 358 21 231 02 15

University of Helsinki
Department of Education
PL 39
Bulevardi 18
00014 University of Helsinki
Tel: + 358 9 191 80 12
Fax: + 358 9 191 80 73

Greece

SELETE – Technical and Vocational Teacher Training Institute
Selete 14121 N. Heraklion
Athens
Tel: + 30 1 284 53 00
Fax: + 30 1 282 10 94

Technological Educational Institute of Patras
Koukouli
GR 263 34 Patras
Tel: + 30 61 32 99 43
Fax: + 30 61 32 99 43

University of Thessaly
Dept of Primary Teachers Education
Argonoftou and Filellinou 38221
Volos
Tel . + 30 3 0421 63 735
Fax: + 30 3 0421 36 434

Technological Institution of
Higher Education in Halkis
Psahna Evia 34.400
Halkis
Fax: + 30 228 23 766

The Netherlands

Nova College
Postbus 2110
2002 Haarlem
Ir. Lelylaan 10
2103 XP Heemstede
Tel: + 30 23 548 26 00
Fax: + 30 23 548 26 20

King William I College
Projectbureau
Internationalisering
Postbus 122
5201 AC's-Hertogenbosch
Tel: + 31 73 624 96 90

Cristelyke Hogeschool Noord-
Nederland
Pbox 1298
2900 CG Leeuwarden
Tel: + 31 58 23 30 438
Fax: + 31 58 23 30 538

Denmark

Industri og Håndværkeskolen
Kringelborg Allé 7
4800 Nykøping F.
Tel: + 45 54 84 77 00
Fax: + 45 54 84 77 84

DLH Aalborg College of Education
Mylius Erichsens Vej 129
9210 Aalborg

Tel: + 45 98 14 50 00
Fax : + 45 98 14 02 15

Austria

College for Teacher Training of
the Diocese of Innsbruck in
Stams Stiftshof 1 A 6422 Stams
Tel: + 43 52 36 52 53
Fax: + 43 5263 52 55

Federal College for Technical
and Vocational Teacher Training
in Graz
Theodor-Körner Strasse 38 A-
8010 Graz
Tel: + 43 316 67 22 50
Fax: + 43 316 67 22 50 55

College for Teacher Training of
the Diocese of St. Pölten
Dr. Geschmeidlerstrasse 22–30
A 3500 Krems
Tel: + 43 2732 835 91 180

Federal College for Teacher
Training in Vorarlberg, Feldkirch-
Tisis

Germany

Humboldt-Universität zu Berlin
Philosophische Fakultät IV
Institut für Wirtschafts und
Erwachsenenpädagogik
Sitz: Geschwister-Scholl-Str. 7
Post: Unter den Linden 6
10099 Berlin
Tel: +49 30 2093 4122
Fax: + 49 30 2093 41 65

Otto-von-Guericke University of
Magdeburg
PF 4120
39106 Magdeburg
Tel: + 49 391 67 16525
fax: + 49 391 67 16550

Otto-Friedrich Universität
Bamberg
Lehrstuhl Allgemeine Pädagogik
Markusplatz 3
96045 Bamberg
Tel: + 49 951 863 18 28
Fax: + 49 951 863 48 28

University of Leipzig
Lehrstuhl Berufs- und Wirtschafts-
pädagogik
Karl-Heine Str. 22 b
04229 Leipzig
Tel: + 49 341 97 31 481
Fax: + 49 341 97 31 489

University of Kaiserslautern
Fachbereich Sozial- und
Wirtschaftswissenschaften
67663 Kaiserslautern
Tel: + 49 631 205 23 16
Fax: + 46 631 205 27 22

Heinrich-Heine-Universität
Department of Counselling
Education and Adult Education
Universitätsstrasse 1
40225 Düsseldorf
Tel: + 49 211 81 120 39
Fax: + 49 211 81 13 468

Technische Fachhochschule Berlin
Fernstudieninstitut
Luxemburger Str. 10

13353 Berlin
Tel: + 49 30 45 04 22 94
Fax: + 49 30 4504 29 74

Ireland

University of Limerick
Limerick
Tel: + 353 61 20 27 01
Fax: + 353 61 20 27 51

Belgium

Provinciale Hogeschool Limburg
Department Gezondheidszorg
Stadsmovaart 94
3500 Hasselt
Fax: + 32 11 22 62 14

Portugal

Higher School of Education of
Beja
Rua Pedro Soares
7800 Beja
Tel: + 351 84 32 31 17
Fax: + 351 84 32 68 24

University of Acores
Department of Science of Edu-
cation
Rua Mae de Deus
9500 Ponta Delgada
Tel: + 351 96 65 31 55
Fa: + 351 96 65 38 70

Higher School of Education Jean
Piaget of North
Rua Dr. Oliviera Cruz
UrbanizaVao dos MerouVos
5340 Macedo de Cavaleiros

Tel: + 351 78 42 67 70

Fax: + 351 78 42 54 30

Sweden

Lund University
Department of Vocational
Teacher Training
Malmö School of Education

Box 23501

200 45 Malmö

Tel: + 46 40 32 53 31

Fax: + 46 40 32 52 04

Linköping University
Faculty of Arts and Science

581 83 Linköping

Tel: + 46 13 28 20 87

fax. + 46 13 28 28 14

Uppsala University

Dep. of Techer Training

Box 2136

750 02 Uppsala

Tel: + 46 18 18 24 65

Fax: + 46 18 18 24 00

Stockholm Institute of Education

Dep. of Vocational Education

Västergatan 2

151 45 Södertälje

Tel + 46 8 737 95 24

Fax: + 46 8 737 95 00

The consortium of Distance
Education

Uppsala University

Box 256

751 05 Uppsala

Tel: + 46 18 18 18 76

Fax: + 46 18 18 19 60

Great Britain

Edge Hill University College

Techer Education

St. Helens Road

Ormskirk

Lancashire

139 4 QP

Tel: + 44 1695 58 43 26

Fax: + 44 1695 57 08 35

University of Wales Swansea

Department of Techer Education

Swansea

South Wales

UK 8A2 7NB

Tel: +44 1792 51 86 64

Appendix 5

Inventory of national educational material used in occupational safety and health training courses in the United Kingdom.

Notes

- 1 Some institutions listed as sources may not originate material but may have an agreement to use another agencies materials. Insufficient information was available to confirm the root of all published materials.
- 2 The users are those organisations that have indicated that the source material is the whole or part of a distance taught course on health and safety
- 3 The award level is intended to indicate the academic level of the material. An academic progression might be from the NEBOSH (National examinations board in occupational health and safety, UK) Certificate to the NEBOSH Diploma and then to a Masters level course.
- 4 This table contains only UK materials which will, of course, be presented in English.
- 5 Inclusion of a course in the list is not an indication of its quality 'We have ... found that the ... course led to a demand for quite high levels of tutorial support, reducing its flexibility considerably' 'distance learning is a possible option but one usually requiring a great deal of tutorial support work due to almost universal ignorance of health and safety at work requirements that is prevalent among the in-service students'
- 6 The table is compiled from a survey carried out early in 1997. Because of the lack of centralised directories it is likely that some providers and some users of materials are not mentioned.
- 7 The variety of types of material on offer have made it difficult to fully characterise the materials in a simple table.

Source	Medium	Title	Users	Award/level
Electricity training association	Audio cassette	Unknown	Electricity training association	
Electricity training association	Units.	The Role and Functions of Safety Representatives The Principles of Good Health and Safety Management Assessing Risks and Taking Appropriate Action Finding a Standard and Sources of Help Legislation in Practice Health and Safety Committees (HESACs)	Electricity training association	Training of new safety representatives and all members of Health and Safety Committees
Granherne Information systems	Software	EQS2 (Environment, Quality, Health and Safety)	Open University	Masters
Grimsby College	Workbooks	Little detail available		NEBOSH qualifications
Health and safety executive	Booklet	5 steps to Risk assessment	Portsmouth University	
Health and safety executive	Booklet	Essentials of Health and Safety	Electricity training association Royal Society for the Prevention of Accidents City College, Norwich	Training of new safety representatives and all members of Health and Safety Committees NEBOSH National General Certificate
Health and safety executive	Booklet	Human Factors in Industrial Safety	Royal Society for the Prevention of Accidents City College, Norwich	NEBOSH National General Certificate

Source	Medium	Title	Users	Award/level
Health and safety executive	Booklet	Safety Representatives and Safety Committees	City College, Norwich	NEBOSH National General Certificate
Health and safety executive	Guidance document	HS(G)38 Lighting at work	Portsmouth University	
Health and safety executive	Guidance document	HSE guide on occupational exposure limits	City College, Norwich	NEBOSH National General Certificate
Health and safety executive	Guidance document	HSE guides 3 and 8	Portsmouth University	
Health Scientific	Software	CHARM (Complex Hazardous Air Release Model)	Open University	Masters
IOSH	Book	Principles of Health and Safety at Work	City College, Norwich Key Health and Safety	NEBOSH Certificate
Key Health and Safety	No details	Supports study of the NEBOSH certificate		NEBOSH Certificate
Neath Port Talbot County Community Education Service	Text	Managing safety	Neath Port Talbot County Community Education Service	IOSH Managing safety certificate
Neath Port Talbot County Community Education Service	Text and video	NEBOSH certificate	Neath Port Talbot County Community Education Service	NEBOSH certificate
Neath Port Talbot County Community Education Service	Text, audio and video	NEBOSH Diploma	Neath Port Talbot County Community Education Service	NEBOSH Diploma
Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Assessment of Health risks	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules
Source	Medium	Title	Users	Award/level

Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Hazardous substances	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules
Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Measurement of hazardous substances	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules
Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Occupational hygiene foundation	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules
Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Physical agents	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules
Occupational Safety, Health and Environmental Management University of Portsmouth	“Flexible distance learning”	Workplace control	University of Portsmouth	BEBOH (British examining board in Occupational hygiene) core modules

Source	Medium	Title	Users	Award/level
Occupational Safety, Health and Environmental Management University of Portsmouth	Books, videos audio tape	Process hazards Health hazards Health and safety law Managing safety	West Anglia Training Association University of Portsmouth The Professional Training Centre Tim Prestage Ltd Cannock Chase Technical College South Tyneside College City College, Norwich Bridgend College	NEBOSH Certificate
Occupational Safety, Health and Environmental Management University of Portsmouth	Books, videos audio tapes	Fundamentals of Occupational Hygiene Physical agents Safety technology Health and Safety Law Hazardous substances Lighting and non-ionising radiation Ionising radiation Noise and Vibration Thermal environment Asbestos hazards Fire safety Electrical safety Construction safety management Law and the environment Environmental Management systems Case studies	University of Ports mouth	Masters

Source	Medium	Title	Users	Award/level
Occupational Safety, Health and Environmental Management University of Portsmouth	Books, videos audio tapes	Risk management Occupational Health and Hygiene Safety Technology Health and Safety Law	University of Portsmouth The Professional Training Centre Tim Prestage Ltd. Cannock Chase Technical College South Tyneside College City College, Norwich	NEBOSH Diploma
Occupational Safety, Health and Environmental Management University of Portsmouth	Print and video	Health and safety Construction Health and Safety	West Anglia Training Association University of Portsmouth Cannock Chase Technical College	NEBOSH Construction Certificate
Occupational Safety, Health and Environmental Management University of Portsmouth	Video	Lighting at work	University of Portsmouth	
Occupational Safety, Health and Environmental Management University of Portsmouth	Video	Local exhaust ventilation	University of Portsmouth	
Occupational Safety, Health and Environmental Management University of Portsmouth	Video	Noise and its control	University of Portsmouth	

Source	Medium	Title	Users	Award/level
Occupational Safety, Health and Environmental Management University of Portsmouth	Video	The management of construction site safety	University of Portsmouth	
Occupational Safety, Health and Environmental Management University of Portsmouth	Video	The management of risk	University of Portsmouth	
Open Learning in Scotland	Booklets	Process hazards Health hazards Managing safety Compliance with the law	OLIS	NEBOSH Certificate
Open Learning in Scotland	Print, video, audio	Risk management Health, Safety and the Law, Occupational Health and Hygiene Safety Technology Case Study	OLIS	NEBOSH Diploma
Open University	Text	Introduction to Safety Health and Environmental management Health and Environmental Effects Risk Assessment Safety Technology Integrated Safety, Health and Environmental Management	Open University	Masters
Open University	Video	Archive material on incidents	Open University	Masters

Source	Medium	Title	Users	Award/level
Open University	Video	Compilation of Risk assessment and management, acoustics, toxicological and epidemiological studies	Open University	Masters
Safety Advice centre	No details	Supports NEBOSH certificate and diploma		NEBOSH certificate and diploma
Suffolk College	Fourteen text based modules	Matter, radioactivity and radiation Radiation protection Radiological mathematics Biological effects Sources of ionising radiation Instrumentation Personnel monitoring Nuclear fuel cycle Applications of ionising radiation Storage and disposal Transport Emergencies Legislation and law Environmental monitoring	Suffolk college	City and Guilds stage II
The emergency planning college	Text	A digest of some well-known disasters	Open University	Masters
The Royal Society for the Prevention of Accidents	Manual	5 units including Law and enforcement Safety management Engineering and construction Occupational health hazards		NEBOSH National General Certificate

Source	Medium	Title	Users	Award/level
Tolley Publishing	Book	Tolley's health and safety at work handbook, a comprehensive, practical guide to health and safety law and practice	Royal Society for the Prevention of Accidents	NEBOSH National General Certificate
Trades Union Congress (TUC)	Book	Hazards at Work	Electricity training association	Training of new safety representatives and all members of Health and Safety Committees
Trinity consultants	Software	BREEZE - dispersion model	Open University	Masters
University of Greenwich	No details given	Ergonomics and workplace psychology	University of Greenwich	Masters
University of Greenwich	No details given	Industrial toxicology	University of Greenwich	Masters
University of Greenwich	No details given	Lighting, ionising and non-ionising radiation	University of Greenwich	Masters
University of Greenwich	No details given	Monitoring, Analysis and control of toxic substances	University of Greenwich	Masters
University of Greenwich	No details given	Occupational Safety Practice	University of Greenwich	Masters
University of Greenwich	No details given	Safety and Risk Management	University of Greenwich	Masters
University of Greenwich	No details given	The thermal and acoustic environment	University of Greenwich	Masters
West Anglia Training Association	Video	Whose risk is it anyway?	West Anglia Training Association	