

Building OHS human capacity through sharing: a learning repository



20-3 Frank van Dijk and Linda Grainger



This presentation describes:

- **Introduction**
 - terms and concepts
 - examples of international initiatives
 - licensing
- **Moves to create a global repository of learning materials**
 - role of WHO
- **Introduction on Geolibrary.org and Workershealtheducation.org**



Introduction

- High burden of occupational diseases and injuries in many parts of the world.
- Shortage of OSH professionals and increased demand for human capacity.

WAHSA Southern Africa report 2009:
650 OP will be trained in next 10 years, but 3500 OPs are needed for 10 % of working population.
Occupational hygienists and occupational health nurses: the same situation.



Education courses and academics are limited, costs are high.

Existing resources must be shared.

New educational forms have to be applied and evaluated.

Using internet-based resources is suggested as a mechanism by which access to professional and community training can be up scaled.



Some terms

Distance learning or distance education

Education with the aim of delivering teaching to students who are not physically present in a traditional educational setting such as a classroom.

Access to learning when the source of information and the learners are separated by time and distance, or both.

(Wikipedia 28-2-2012, adapted)



E-learning

All forms of electronically supported learning and teaching.

Is computer and network-enabled transfer of skills and knowledge.

(Wikipedia 28-2-2012, adapted)



Blended learning

A mixing of different learning environments, combining traditional face-to-face classroom methods with more modern computer-mediated activities.

Technology will be more important, using online learning materials is popular.

(Wikipedia 28-2-2012, adapted)



Examples of international initiatives



Distance learning, and e-learning have been piloted at some institutions in the SADAC region.

Access to training can be increased substantially over a relatively short period of time.

E.g. Diploma in Occupational Health at University of Cape Town, short courses in mining management at the School of Mines at the University of Zambia.





Salud Ocupacional cruzando las fronteras
Lima, Peru 2010 (LMU Germany)



Some other terms

Learning repository

A virtual library for digital learning materials.

System for storage, location and retrieval of electronic content. To provide access to digital educational materials.

Its content and metadata reflects the intention that these materials be used in an educational context.

(Holden, 2003)

Should provide access to the increasing supply of digital educational content.

The type of components: graphics, images, texts, applets, videos, documents and integration of them as parts of a course or even complete courses.

An additional requirement for ensuring access to the content is the aspect of openness. Models in which e.g. universities ask limited fees for services, maintenance and updating of materials have to be tried out.



Must aim to promote a **community of practice** around it, which will use and improve the materials.

Group of individuals with a shared goal related to teaching and learning and who are either currently or may in the future use the Learning Repository.

(Margaryan et al., 2007)

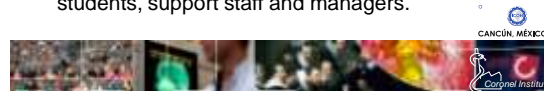


The community consists of:

- A core group who develops and uses the materials and are involved in the management of the repository.
- The wider community of stakeholders or actors who could potentially use the repository.



The people in both groups can include teachers, students, support staff and managers.



Open Educational Resources (OER)

Teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others.

Include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

(Atkins et al.)



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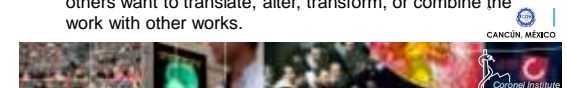
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All may have one or more of the following:

- **Share Alike** - Others can distribute derivative works, only under the same conditions as the original work was made available.
- **Non-Commercial** - Others can copy, distribute, display and perform the work, and derivative works based upon it, but for non-commercial purposes only. Author permission if to be used for commercial purposes.
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Moves to create a global repository of learning materials

Role of WHO global plan of action



Initial SADAC proposal 2009

A network of educators in OHS formed with the common goal of developing a learning repository of open education resource learning materials, and of providing support and the necessary capacity development to facilitate the use of such materials to expand training capacity at institutions across southern Africa.



Network origins in two Southern African programmes in OHS:

- WAHSA programme, a bi-regional Swedish-Southern Africa initiative that united OHS organisations from 10 institutions in 8 Southern African countries; and
- University of Michigan/Fogarty International Center Southern African Programme in Occupational and Environmental Health, to build training capacity and research skills in occupational and environmental health in Southern Africa, also funded the development of distance learning materials in OHS by Professor Jonny Myers at UCT with the intention that they be available for use within the region.



Educational institutions involved in the Fogarty and WAHSA programmes to date

In Southern Africa

Botswana: University of Botswana

Malawi: College of Medicine, Blantyre

Mozambique: Universidade Eduardo Mondlane

South Africa: Universities of Kwazulu-Natal, Cape Town and the Witwatersrand and Durban and Cape Peninsula Universities of Technology

Tanzania: Muhimbili University of Health and Allied Sciences



Southern Africa continued

Zambia: University of Zambia

Zimbabwe: University of Zimbabwe

In Sweden (in the WAHSA programme)

The National Institute for Working Life, until its closure in 2007

The National Institute for Public Health

The Royal Institute for Technology

In the United States (in the Fogarty programme)

The University of Michigan



World Health Organization

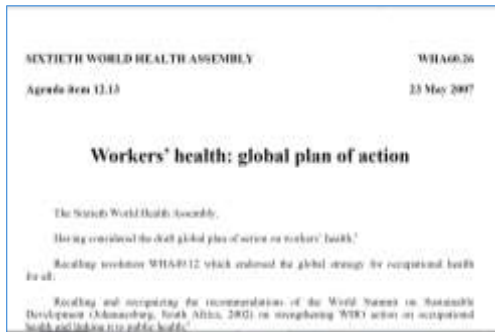
Occupational health

Network of WHO Collaborating Centres in Occupational Health

The 2009-2012 Strategy represents the contribution of the WHO Global Network of Collaborating Centres in Occupational Health to assist countries in improving their health systems, resolution 62.28, the Global Plan of Action on Workers' Health 2009-2017.

World Health Assembly, Resolution 62.28: The Global Plan of Action on Workers' Health 2009-2017

The 2009-2012 Strategy is registered into 2 algorithms, reflecting those of the Global Plan of Action, and is further subdivided into 10 priorities. Four documents constitute the full Strategy.



Global Plan of Action on Workers' Health Objective 3, Priority 3.2 of the Global Network of WHO Collaborating Centres for OH

Period 2009 –2012

The purpose is to adapt and disseminate curricula, training materials and training for international capacity building in OH.

One initiative is the development of a Learning Repository.



The 29th International Congress on Occupational Health (ICOH) 2009 in Cape Town

Meeting Sc C Education
and Training

Special Session on BOHS
education



Scientific Committee on Education and Training in Occupational Health

Jonny Myers from Cape Town S.A. noted the need to integrate educational initiatives into the development of a Learning Repository as a means of addressing capacity problems – supported by many.



Frank van Dijk (Neth), John Harrison (UK) and Paul Smits (Neth) organized a Special Session on international support for professional education for *basic occupational health services*.

A survey of 15 delegates, from a wide range of countries, conducted during this session indicated

support for a LR
materials do exist
there is a need to identify educational and topic experts.



Survey of WHO CCs

Four levels of resources were identified:

- Level 1 - Discrete learning resources;
- Level 2 - Modules: self contained learning units comprising discrete learning resources;
- Level 3 - Whole systematic programmes which combine courses for professional learning;
- Level 4 – Meta-learning materials.



Potential contributions based on survey responses

	Level 1 Discrete learning resources	Level 2 Modules	Level 3 Programmes	Level 4 Meta level
Number of responses	2	7	9	1
Number of potential contributions	2	12+	8 - 11	0

(Myers and Grainger)

WHO Geneva, October 2009

Meeting and workshop for experts from 54 CCs and international partners to develop the proposal for scaling up international and national efforts on training and education.



Produced a plan for creating an OER Learning Repository and a community of educators, maximizing participation of local and regional educators.

Points agreed related to the:

- functions to be incorporated;
- materials;
- technological aspects;
- the social networking dimension;
- evaluation and marketing.

PROPOSAL FOR A WHO OPEN EDUCATIONAL RESOURCE LEARNING REPOSITORY IN OCCUPATIONAL HEALTH WITH ASSOCIATED NETWORK OF EDUCATORS

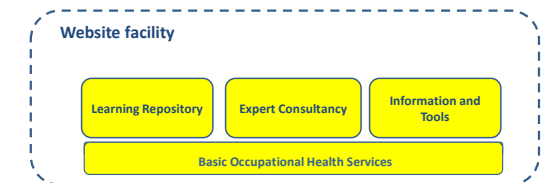
Linda Grainger et al, February 2010

The overall aim is to increase access to education and training in occupational and environmental health and safety for both generalist and specialist professionals globally.

Objectives

1. Develop a repository of open-source based learning material on OHS.
2. Facilitate the use of the repository and ensure its ongoing sustainability by:
 - Developing capacity globally and regionally for the creation, adaptation and delivery of learning materials.
 - Creating global and regional networks of educators to support and sustain OSH e-learning.
 - Evaluating and promoting the use of the learning materials in OSH.

2010 comprehensive plan for a WHO Collaborating Centers (ICOH supported) online platform for Occupational Safety and Health Capacity Development



2010 comprehensive plan for a WHO Collaborating Centers (ICOH supported) online platform for Occupational Safety and Health Capacity Development (Cape Town, London, Helsinki, Munich, Chicago, Amsterdam)



2010 comprehensive plan for a WHO Collaborating Centers (ICOH supported) online platform for Occupational Safety and Health Capacity Development (Cape Town, London, Helsinki, Munich, Chicago, Amsterdam)



WHO June 2010:

Plan is too expensive
BOHS as concept needed to be studied more

Initiative stopped temporarily

May 2011 a subsidy was received from WHO to develop and start an online repository for learning materials with priority for BOHS capacity building. Coronel Institute provided a subsidy in addition.

For the period 2012-2017, WHO GPA Priority 3.2: Creation, dissemination and evaluation of training and education projects which support occupational health services, especially basic occupational health services (BOHS)



Projects which characterize occupational health training programs and models for implementation which can be used by low resource countries.

Projects which contribute to an inventory of learning materials into GeoLibrary www.geolib.org or in www.workershealtheducation.org.

Projects which develop strategies for disseminating and evaluating the use of training materials / practice tools.

Projects which implement prevention content into community and primary care training programs.

Projects which identify existing platform options or create a specialized platform for engaging experts, creating partnerships, and establishing twinning/mentorship relationships.



ICOH 2012, Cancun Mexico

Two oral paper sessions on the development of global/ regional LR and information sharing.

Many contributions about education and training throughout the congress!

Revitalisation of the Sc C Education and training in Occupational health.



Two concrete examples:

Geolibrary.org

Workershealtheducation.org



Database of Environmental and Occupational Health Educational Materials for International Audiences

GEOLibrary – global environmental and occupational library
www.geolibrary.org

Why a Database?

- Available information is varied and not conveniently located
- Information is not easily shared
- Searching for needed information can be daunting
- Providing just in time resources for educators in all parts of the world

GeoLibrary.org - Purpose

- Entirely **public domain**
- Teaching materials and practice tools for educators, researchers, trainers, and students
- Increase awareness for agencies and centers of available resources for addressing global environmental and occupational health needs



GeoLibrary.org - Organization

- Separate homepages for environmental, occupational, and road safety materials
- Global contributing editors include representatives from
 - University of Illinois at Chicago
 - World Health Organization (WHO)
 - Pan American Health Organization (PAHO)
 - NIOSH (US)
 - CDC (US)
 - US Environmental Protection Agency (US)
 - FUNDACENTRO (Brazil)
 - Singapore
 - Spain.



HIGHLIGHTS

Materials available in 6 languages



English, Portuguese, Chinese, Arabic, French and Spanish



Advanced search features



Users can suggest materials



Specialty libraries

"Hot topic" sections

- Collaboration with PAHO on
 - H1N1
 - Environmental Disaster-Haiti
- Collaboration with NIOSH
 - Young workers
 - Road Safety Specialty Library



Materials in multiple formats



Complete courses, webcasts, tutorials/modules, factsheets, databases, and sample/ model programs and guidelines

Current Status

- Contains almost 2880 different training materials and practice tools including over 1700 occupational health materials
- Accessed by individuals in over 30 countries
- Visits to the GeoLibrary were recently measured using Google analytics
 - Average approximately 250 visits per month with over 900 page views.
 - In August 2011 there were 144 individuals with a total of 225 visits
 - Most visitors in August 2011 were from the US, Canada, India, and Columbia.
 - Visits to the sites generally arrive through direct traffic (about 25%); referring sites (about 50%); and search engines (25%).

Workershealtheducation.org

- A new repository developed for online learning materials.
- A community of practice will be started.
- Focus on basic occupational health services.



CANCÚN, MÉXICO

The way forward:

- Enhancement of search capacity
- Enhance to gather information on the types of users and use of materials
- Identify resources to support improvements and evaluation of the site
- Key initiatives in 2012-2017 work plan will address limitations, enhance the e-library, and harmonize with and complement the workershealthtraining.org clearinghouse

Development started May 2011

Based on the 2010 reports a low budget portal-type repository was developed with financial support of WHO Geneva and the Coronel Institute of Occupational Health in Amsterdam.

The pilot started in November 2011.

The official launch is in Cancun, México, March 2012.

CANCÚN, MÉXICO

We are open to suggestions!



Why, by whom and for whom?

Workers' Health Education aims to support education and training in basic occupational safety and health knowledge and skills all over the world.

The initiative is meant to improve the situation for the large numbers of workers worldwide that lack (semi)professional support in labor health and safety.

The initiative is supported by the **WHO Network** of Collaborating Centers in Occupational Health and by **ICOH**.

CANCÚN, MÉXICO

Purpose

To facilitate the education of non-specialists in basic occupational safety and health to enhance the quality and effectiveness of their work by providing good quality learning materials, easily accessible and in general free-of-charge.

The website provides thorough descriptions of the learning materials in metadata, also for easy finding of materials.

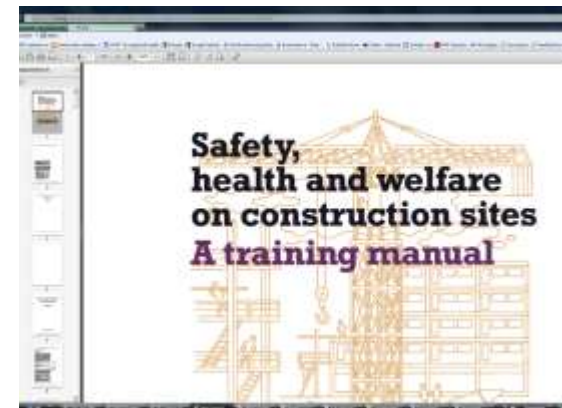
Exchange of experiences between all those committed will be encouraged by a Forum, via which users can exchange questions, experiences, plans, programs, curricula, etc.





As an example: under 'Awareness' you can find 9 records:

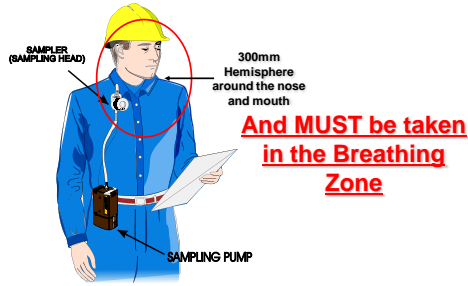
- Health, Safety and Environment: A Series of Trade Union Education Manuals for Agricultural Workers
- Safety, health and welfare on construction sites. A training manual
- Occupational & environmental cancer: recognition and prevention
- Protect Patti. Practicing personal protection
- Farm wise. Your essential guide to health and safety in agriculture
- Wind of change
- Manual Material Handling / Manipulación Manual de Cargas
- Biological Hazards / Riesgos Biológicos
- Introduction to asbestos learning package - An interactive lesson for apprentices about asbestos and its dangers.





Course Title	Version	Language	Created	Last Modified	Accession Number
Dust Practical	v1-0	JA21	13 Apr 10	674	
Gas and Vapour Sampling Practical Student Exercises	v1-0	JA20	13 Apr 10	288	
Basic for video and case study 1	[DOC]	JA20	13 Apr 10	118	
Student Support Information Key Calculations	v1-0	JA31	13 Apr 10	879	
Student Support Info Working, Seebbing And Thermal Mist Cutting	v1-0	JA35	13 Apr 10	549	
Teaching Guide	v1-0	JA34	13 Apr 10	385	
Exams Timetable	v1-0	JA36	13 Apr 10	274	
Final Stakes Day 1	[PDF]	JA36	13 Apr 10	214	
Final Stakes Day 2	[PDF]	JA37	13 Apr 10	314	
Final Stakes Day 3	[PDF]	JA38	13 Apr 10	314	
Final Stakes Day 4	[PDF]	JA39	13 Apr 10	314	
Student Support Info Key Calculations	v1-0	JA41	05 May 10	879	
Study 2 Supplementary Information for Lecturer	[PDF]	JA42	27 Jul 10	821	
Final Stakes Day 5	[PDF]	JA40	13 Apr 10	114	

Position of Sampling Device



Source: Almet Scientific - reproduced with permission

Diffusion or Passive Sampling

$$\text{Fick's Law } \frac{m}{t} = \frac{AD}{L} (C_0 - c)$$

- where m = mass of adsorbate collected in grams
- t = sampling time in seconds
- A = cross sectional area of the diffusion path in square cm
- D = diffusion coefficient for the adsorbate in air in square cm per second – available from manufacturer of the sampler for a given chemical
- L = length of the diffusion path in cm (from porous membrane to sampler)
- c = concentration of contaminant in ambient air in gram per cubic cm
- C₀ = concentration of contaminant just above the adsorbent surface in gram per cubic cm



Back office of workershealtheducation

Metadata



Other functions of the facility

Forum and community of practice

Reference materials for BOHS





Reference Material

WRITTEN MATERIAL FOR BASIC SERVICES

Guidelines for BOHS development
J. Rantanen / S. Lehtinen, 2007 and 2009.

Occupational health: a manual for primary health care workers development
WHO Regional Office for the East Mediterranean, 2002.

Addressing work-related injuries and illnesses: a guide for primary care providers in Massachusetts
L.S. Azaroff, M. Goldstein-Gelb, et al. (eds.), 2004.



Reference Material

GLOSSARIES

Glossary for Basic Occupational Safety and Health
Van Dijk, Varekamp, Radon, 2011

Glosario básico para Salud y Seguridad Ocupacional
Van Dijk, Varekamp, Radon, Parra. Version 02, 2011

Glossary of Occupational Health & Safety terms
IAPA, 2007.



Reference Material:

LINKS TO OTHER INITIATIVES

GeoLibrary Chicago (GLC)

OH learning website
Occupational Hygiene Training Association (OHTA), UK

Cochrane Occupational Health Field
Finland

¿Cómo buscar la evidencia en las fuentes de internet?
Salud Ocupacional
Van Dijk 2011 in collaboration with Radon, LMU Germany / L.A.
universities in course "Cruzando Fronteras".



Short-term plans for Workershealtheducation

- Acquisition of new online learning materials to fill many gaps.
- Organizing quality assurance.
- Starting a *community of practice* using the forum function for exchange of experiences and materials.
- Acquisition of actual BOHS documents as Reference Material.



Short-term plans for Workershealtheducation

- Developing a *Steering Group*.
- It is vital to organize close contacts with **Geolibary** for harmonization and collaboration.
- Search for limited financial resources, with a clear sponsoring policy.
- Providing support for developing materials and courses, especially for basic occupational health and safety capacity building.



Concluding remarks

- There is an enormous need for OSH education! Online learning materials can help.
- Many new international initiatives can be noted. International collaboration works excellent and can be extended!
- We can discuss how regional collaborations such as in Africa, America, Asia, Europe, Australia, can be linked to global initiatives.
- WHO, ILO, ICOH, IEA, IAOH and others will support new collaborations.



Concluding remarks

- We prefer Open Access for learning materials or low not-for-profit prices.
- We can experiment with communities of practice of committed teachers and experts.
- We need for our facilities subsidies or a business model that guarantees continuation and improvements.
- We need more and good evaluation studies.



- Please send in new learning materials to Geolibrary.org and Workershealtheducation.org, especially when useful for BOHS.
- Join our and other initiatives actively!

