

E-Learning as a Training Tool

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Outline

- ▶ Impetus for developing e-courses
- ▶ How did it start, where are we now
- ▶ Advantages & disadvantages
- ▶ Methods of evaluating learning
- ▶ Tips for developing e-courses
- ▶ Lessons learned
- ▶ Steps involved in developing an e-course
- ▶ Resources required



Why did CCOHS start developing e-courses?

- ▶ Have been delivering Health and Safety for Managers and Supervisors for 15+ years
- ▶ 2-day classroom course
- ▶ Delivered 4-5 times per year in Hamilton
- ▶ Multiple on-site courses in Canada and internationally



Why did CCOHS start developing e-courses? (continued)

- ▶ Demand exceeded our ability to deliver classroom courses
- ▶ Requests for on-site courses nationally and internationally
- ▶ Requests for courses in other languages
- ▶ Requests from large organizations for e-courses
- ▶ Requests for “more for less” - more frequent courses, more subjects, lower overall cost for learners



How did it start?

- ▶ Began discussing e-learning in the 1990's
- ▶ Impetus to begin development was from Pan American Health Organization (PAHO) in 2002 who wanted a Spanish version of the Health and Safety Managers e-course
- ▶ Developed English e-course, then translated to Spanish in 2003



How did it start? (continued)

- ▶ Changed platforms, partnered with Vubiz
- ▶ Infrastructure already developed – Learning Management System, e-commerce
- ▶ Revised English version, developed French version, began marketing in early 2004
- ▶ Began developing other requested topics



Where are we now?

- ▶ Offer 24 tripartite reviewed e-courses in English and French
- ▶ 10 new e-courses planned for the next year
- ▶ Over 20,000 e-course “seats” sold since March 2004
- ▶ Develop customized e-courses for clients



Advantages and disadvantages

- ▶ For learners
- ▶ For organizations
- ▶ For trainers/ course developers



Advantages for learners

- ▶ Better retention
- ▶ Learn at their own pace
- ▶ Less intimidating
- ▶ Available at any time
- ▶ Instructor can be available to answer questions, address concerns



Disadvantages for learners

- ▶ Less interactive
- ▶ Must be literate and computer-literate
- ▶ People learn in different ways - not all learn well by reading
- ▶ Requires more self-discipline/motivation
- ▶ May be boring if course is poorly designed
- ▶ Not practical for all types of training – suitable for awareness only



Advantages for organizations

- ▶ Stretch training dollar farther
- ▶ Uniform course content
- ▶ Available anytime, anywhere
- ▶ Automated tracking and scoring



Disadvantages for organizations

- ▶ Organization must provide computers, Internet access for learners
- ▶ Some learners aren't comfortable with computers, prefer classroom courses
- ▶ Some subjects still require instructor-led training
- ▶ Additional expertise and infrastructure required for developing courses - may not have resources in-house



Advantages for trainers/ course developers

- ▶ Extends reach of training expertise
- ▶ Once a course has been developed, it can be delivered to thousands of people
- ▶ Objective testing, not just trainer's opinion of whether learners "got it"



Disadvantages for trainers/ course developers

- ▶ Subject knowledge isn't enough
- ▶ Instructional design expertise required
- ▶ Multimedia design and development expertise required
- ▶ Infrastructure required - systems for developing, delivering, and tracking the use of courses
- ▶ Can be expensive - \$50,000+ per hour of training



Issue – “Successful Completion”

- ▶ Classroom course - instructor sees attendance and participation
- ▶ E-course - need objective way of ensuring that learners have seen/heard all the material, and understand it
- ▶ Require proof of participation, competence (Management responsibility, Continuing Education credits)



Evaluating Learning

Classroom

- ▶ Observation
- ▶ Learner's participation
- ▶ Written testing

E-course - Several approaches...



Evaluating Learning

- ▶ “Test your knowledge” - interactive activities throughout the course
- ▶ Case studies - interact with instructor
- ▶ “Self-Assessment” - Q&A at the end of a module/course - scored but not tracked
- ▶ Exam - more formal Q&A - set number of questions, number of times exam can be taken, passing grade



The Good News

Based on the evidence of exam scores and interaction between learners and the instructor, we have found that:

Learners are taking the time to learn the material, then applying knowledge and skills learned to their own work situations



Tips for Developing Effective E-courses

- ▶ Material should be divided into “digestible chunks” - not more than 50-60 slides per module
- ▶ Present the basics on the pages, additional detail in optional pop-ups
- ▶ Add images wherever appropriate
- ▶ Include interactive activities throughout to engage the learner, reinforce material



Tips continued

- ▶ Add “voiceover” to aid auditory learners, less literate individuals
- ▶ Include case studies to prompt thinking beyond the subject material, invite interaction
- ▶ Have an instructor available to answer questions, discuss concerns
- ▶ Develop FAQs based on learners’ questions



Bottom Line...

An e-course is not an online manual and shouldn't be used to dump piles of text on the learner



Some Lessons Learned

From the learners' viewpoint:

- ▶ Work should be scheduled so that learners don't have to spend more than an hour at a time in a course
- ▶ Many learners want ready access to an instructor (e-mail, phone)
- ▶ Many learners want a printed course manual
- ▶ Most learners want signed, paper certificates of completion



Some Lessons Learned

From the course developer's viewpoint:

- ▶ If "converting" an existing classroom course, speakers' notes, PowerPoint slides and user manuals usually aren't enough
- ▶ Need ready access to the classroom instructor to fill in the inevitable information gaps
- ▶ E-courses are self-contained - this is all the learner is going to get!
- ▶ Balance "need to know" against information overload



Developer's Lessons (continued)

- ▶ When reviewing the e-course, ensure good information flow by reading out loud
- ▶ Review, review, review

Takes longer and costs more
than you expect to
develop an e-course!



Steps to Develop an E-course

- ▶ Identify topic, content author
- ▶ Determine learning objectives for e-course
- ▶ Develop outline (like detailed Table of Contents)
- ▶ Develop 1st draft in English using PowerPoint - text, sample images



Steps continued

- ▶ Internal review of draft for:
 - Structure and flow
 - Clear language
 - Content
- ▶ Create English course in presentation software
- ▶ Develop graphics



Steps (continued)

- ▶ Final internal review – incorporate comments
- ▶ Tripartite external review – incorporate comments
- ▶ Send content for translation
- ▶ Record English voiceover
- ▶ Technical set up for public release, CCOHS web server, learning management system



Steps continued

- ▶ Receive/ review translation
- ▶ Create French course in presentation software
- ▶ Create any necessary graphics for French version
- ▶ Record French voiceover
- ▶ Technical set up for public release, CCOHS web server, learning management system



How Long Does it Take?

To develop
one-hour course in English -

minimum 4-5 months



Resources required to develop a one-hour e-course

- ▶ Writer(s), editors, graphic artist(s), course builder(s), sound editor(s), voice talent, project manager(s)
- ▶ Approximately 20 people at CCOHS involved in e-learning, plus external authors and reviewers
- ▶ Total of 70-90 person-days required, excluding infrastructure support, translation of content



Resource breakdown

- ▶ 10-15 person-days (PDs) for writing e-course draft
- ▶ 20-30 PDs for various edits
- ▶ 6-10 PDs for graphics development
- ▶ 2-4 PDs for sound recording/ editing
- ▶ 5-7 PDs for various promotional activities (media releases, web pages, catalog, targeted mailings, etc.)
- ▶ 10 PDs for project coordination
- ▶ 10-15 PDs for other activities – course building, QA, etc.



Sample Pages from “Health and Safety for Managers and Supervisors”





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NAOSH Week--May 1-7, 2007
CCOHS

Sample Pages

Module 5 - Occupational Hygiene - Windows Internet Explorer

http://vubiz.com/v5/ffModules/0165EN/default.asp?vModType=f&vModId=0165EN&vProgId=P1109EN&vPageNo=0&vTest=Y&vBookmark=Y&vFirstName=Chris&vLastName=Moore&mode=0&vEmail=ci



Canadian Centre for Occupational Health and Safety

Module 5

Occupational Hygiene

SKIP ►►

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Sample Pages

Module 5 - Occupational Hygiene - Windows Internet Explorer

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CCOHS Module 5 - Occupational Hygiene

Section 1 – Introduction

Objective

To provide an overview of hazardous exposures in the workplace, related health risks, and methods of control to eliminate/reduce such exposures.

In this module, participants will learn:

- Basic strategies of exposure control
- Steps to protect the environment
- The effects of workplace exposures on the human body including:
 - Exposure to biological hazards
 - Exposure to chemicals
 - Exposure to physical agents: noise, heat, radiation
 - Indoor air quality
 - Psychological stress

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Sample Pages

Module 5 - Occupational Hygiene - Windows Internet Explorer

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CCOHS Module 5 - Occupational Hygiene

Section 1 – Introduction

- 1. Introduction**
2. Contact Instructor
3. Workplace Exposures
4. Effects of Exposures on the Human Body
5. Biological Exposures
6. Chemical Exposures
7. Managing Chemical Exposures
8. Exposure to Physical Agents
9. Indoor Air Quality
10. Psychological Stress
11. Environmental Concerns
12. Conclusion

the workplace, related health risks, and methods of control

human body including:

- Exposure to physical agents: noise, heat, radiation
- Indoor air quality
- Psychological stress

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CCOHS Module 5 - Occupational Hygiene

Section 2 – Contact Instructor

Contact Instructor



[Click here](#) [external link] to contact your instructor.

Throughout the module, the icon above indicates an opportunity to contact your instructor. You will have the option of asking questions and/or participating in a discussion.

You can contact your instructor at any time by returning to this page. Just click on the Menu button in the bottom left corner to open the Table of Contents, then select Contact Instructor.

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CCOHS Module 5 - Occupational Hygiene

Section 5 – Biological Exposures

Biological Agents

Examples of biological agents are:

- Molds
- Fungi
- Bacteria
- Viruses

The health effects of exposure to biological agents include infectious diseases, asthma and allergies.

For some specific examples [CLICK HERE](#)



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Double click to change security settings

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Sample Pages

Module 5 - Occupational Hygiene - Windows Internet Explorer

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CCOHS Module 5 - Occupational Hygiene

Section 6 – Chemical Exposures

Case Study – For Reflection and Discussion


Imagine that your workplace is asked to report on levels of airborne chemicals – 10 years ago.

Are the reports filed?

Do the reports survey important/strategic work areas?

What reporting system are you using now?

Will your reports be readily accessible in 10 years?

 [Click here](#) [external link] to discuss this case study.

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Module 5 - Occupational Hygiene - Windows Internet Explorer

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CCOHS Module 5 - Occupational Hygiene

Section 6 – Chemical Exposures

Test Your Knowledge

Which of the following exposures is **not** a biological hazard?

Select the answer you think is correct, then click the **SUBMIT** button.

- 1. Anthrax.
- 2. Moulds and fungi.
- 3. Hepatitis B.
- 4. Volatile organic compounds.

SUBMIT

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Some other CCOHS e-courses

- ▶ Accident Investigation
- ▶ Confined Spaces (2 courses)
- ▶ Electrical Hazards
- ▶ Health & Safety Committees
- ▶ Lockout
- ▶ Office Ergonomics
- ▶ WHMIS (3 courses)
- ▶ Violence in the Workplace (2 courses)

Plus many more...

Visit <http://www.ccohs.ca/education>



Thank you!

For More Information, Contact:

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