



Put chemical management into practice

COMPETENCE DEVELOPMENT

Competence Development



Looking into

- CMS training requirements
- Assess training needs
- Addressing training needs
- Develop tailored training
- Organisational issues

Requirements as per ZDHC

ZDHC CMS references

CMS 3.2 Training

- Ensure competence of personnel through appropriate education, training or experience
- Retain associated chemical records
- Establish, document and implement a process to conduct and track training
- Assess training effectiveness with a quiz or by monitoring an appropriate activity to demonstrate learning
- Ensure that personnel awareness of the relevance and importance of their activities and how they contribute to achieving chemical objectives

Requirements as per ZDHC

ZDHC CMS references

CMS 3.2 Training

Ensure that personnel are competent through appropriate education, training or experience on

- Preventive environmental and work safety practices
- Saving resources
- Use of personal protective equipment
- Personal hygiene measures



Requirements as per ZDHC

ZDHC CMS references

3.2.1 Management

...informing top management of their roles in managing chemicals

3.2.2 Regulatory

...a training process for making appropriate staff knowledgeable about the legal requirements

3.2.3 Work Practices

...making chemical-handling staff aware of appropriate work practices, e.g. CMS 3.5 Chemical Management Work Practices

3.2.4 ZDHC Training



Requirements as per ZDHC

ZDHC CMS references:

Expected CMS Deliverable:

- Training matrix outlining training needs and training content
- Roster of training attendees
- Procedure for chemical transportation and training on transport of a chemical (CMS 3.5.5)
- ...



ZDHC CMS audit questions

Example



“Are training records maintained to demonstrate that facility personnel handling chemicals have the required education, training and skills to perform their assigned responsibilities and activities?”

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Approaches

Formal training

- General induction training and refresher training
- Special skills training
- ...

Re-enforcement

- Workplace supervision/briefings
- Work instructions and signs
- ...



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Subject areas for consideration

For example

- Hazards associated with and possibility of exposure to chemicals used at workplace.
- Preventive environmental and work safety practices
- Good resource efficiency practices
- Selection and use of personal protective equipment
- Personal hygiene practices
- Emergency prevention and response
-



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Organisational issues

Planning your training

- Clearly identify your training target groups
- Decide on training/awareness raising objectives
- Define expected learning outcomes
- Select training methods and identify resources needed
- Assess requirements and availability of trainers
- Set training course dates, duration, agenda and venue, frequencies
- Establish methods to evaluation and follow-up of training results



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Possible target groups

- Management personnel
- Supervisors
- Worker
- Specialists
- Suppliers
- Contractors
- ...

Ask yourself...

- What are the required knowledge and skills to allow the person to perform his/her role, task in context of chemical management ?
- What are the current knowledge/ skill gaps?



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Assess training needs

General purpose

1. To develop or change attitudes?
2. To enhance knowledge?
3. To develop/enhance specific skills?

Type of training

- General orientation or refresher
- Into-the-job
- For-the-job
- On-the-job
-



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Basic questions to ask

Why	Why training at all? What would be an alternative? What are the training objectives? What should the participants think and/or do at the end of the training?
What	What can I put over in the available time? What intellectual level will I pitch my training? What audiovisual aid will/can I use?
Who	Who is the target group? Age? Nationality? Level? Language abilities? Prior experience? Expectations? Mind sets?
When	What is a good timing for the training? How much time do I have for the training?
Where	Building? Room? Layout? Seating patterns? Interruptions? Temperature? Noise?



Document training needs

Training matrix



Learning objective or subjects	Chemical hazard and exposure awareness	Recognise chemical labels and safety signs	Follow safe work practices as per work instructions	Use of personal protective equipment	Use safety data sheets	...
Job title						
Production manager		●			●	
Production supervisor	●	●	●	●	●	
Store personnel	●	●	●	●	●	
ETP staff	●	●	●	●		
Worker area 1	●	●	●	●		
Worker area 2	●	●	●	●		
EHS Officers	●	●	●	●	●	
Admin.		●			●	
.....						

Document training needs

Training matrix

Use training matrix to

- identify and organize CM training requirements and needs for each job at your company
- distinguish between training topics that apply to a broad target group (all company staff e.g. induction training) vs. those that apply to a narrower target group (laboratory staff, waste handler, EHS officers => special skills or knowledge)
- track individual target group member`s progress toward completing their training requirements
- assess training effectiveness



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Defining learning outcomes

To development and implement effective training, remember and keep in mind the following phrase:

“At the end of this training the participants
will be able to...”



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Defining learning outcomes

Examples:

“At the end of this training the participants will be able to...

- explain the meaning of hazard symbols on chemical container
- identify the required personal protective equipment consulting safety data sheets
- correctly use respiratory protective equipment
- follow-up clean-up procedure in case of accidental release
- extract information on safe storage from a safety data sheet
-



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Select mode of delivery

Depending on intended learning outcomes

- Lecture/demonstration/presentation
- Exercise
- Case study
- Role play
- Drill
- Film
- ...



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Consider adult learning principles

Preparing a learning experience

1. Adults learn by doing.
2. Use realistic examples.
3. Variety is the spice of life.
4. Conduct training in informal environment
5. Inform learners of learning objectives.
6. Guide and prompt; do not tell.



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Consider adult learning principles

**Increase effectiveness of “Learning through experience”
(= apply Experiential Learning)**

When learning, you remember by



hearing / listening

20%



seeing

30%



hearing / listening and seeing

50%



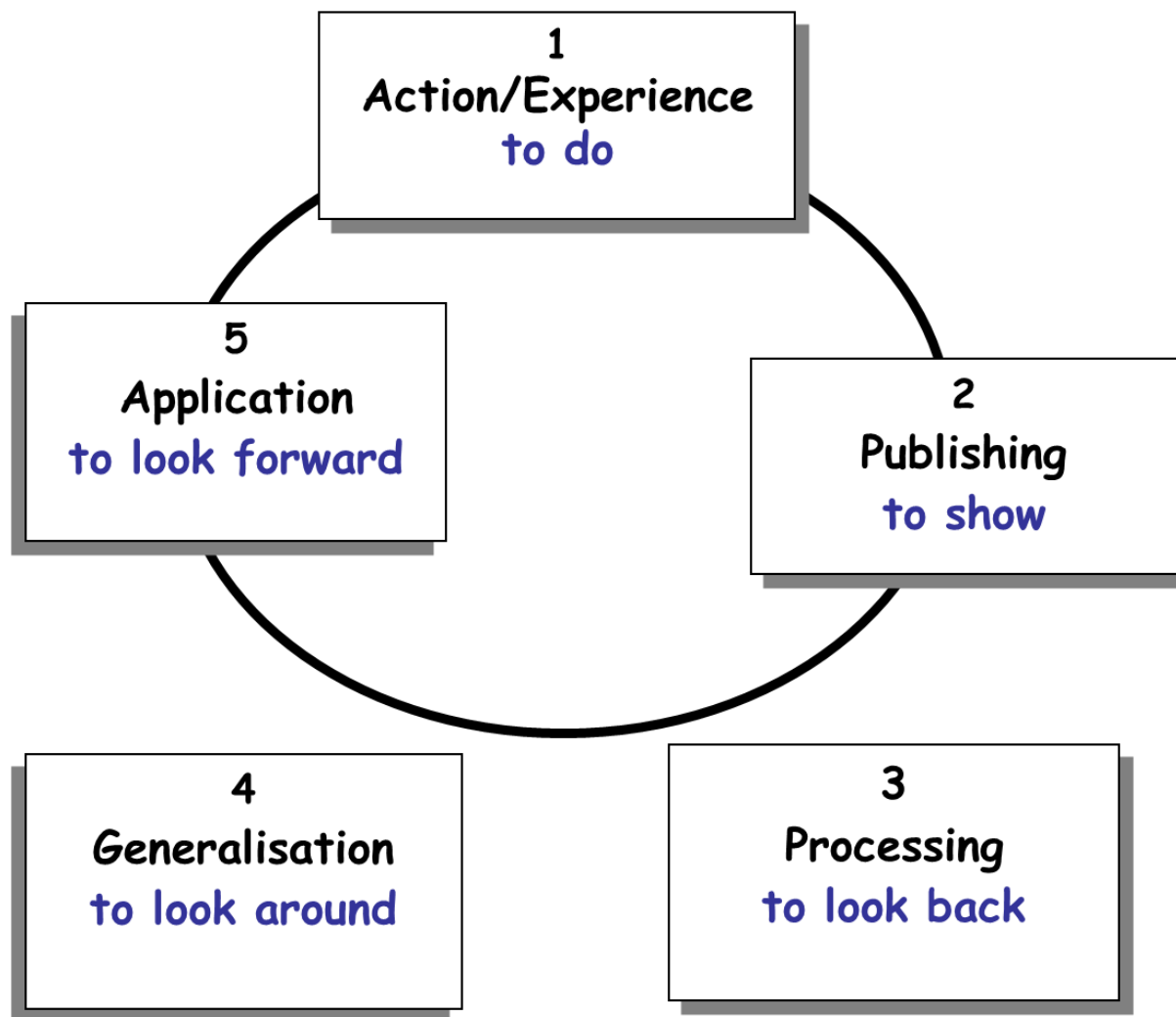
discussing / expressing yourself

70%



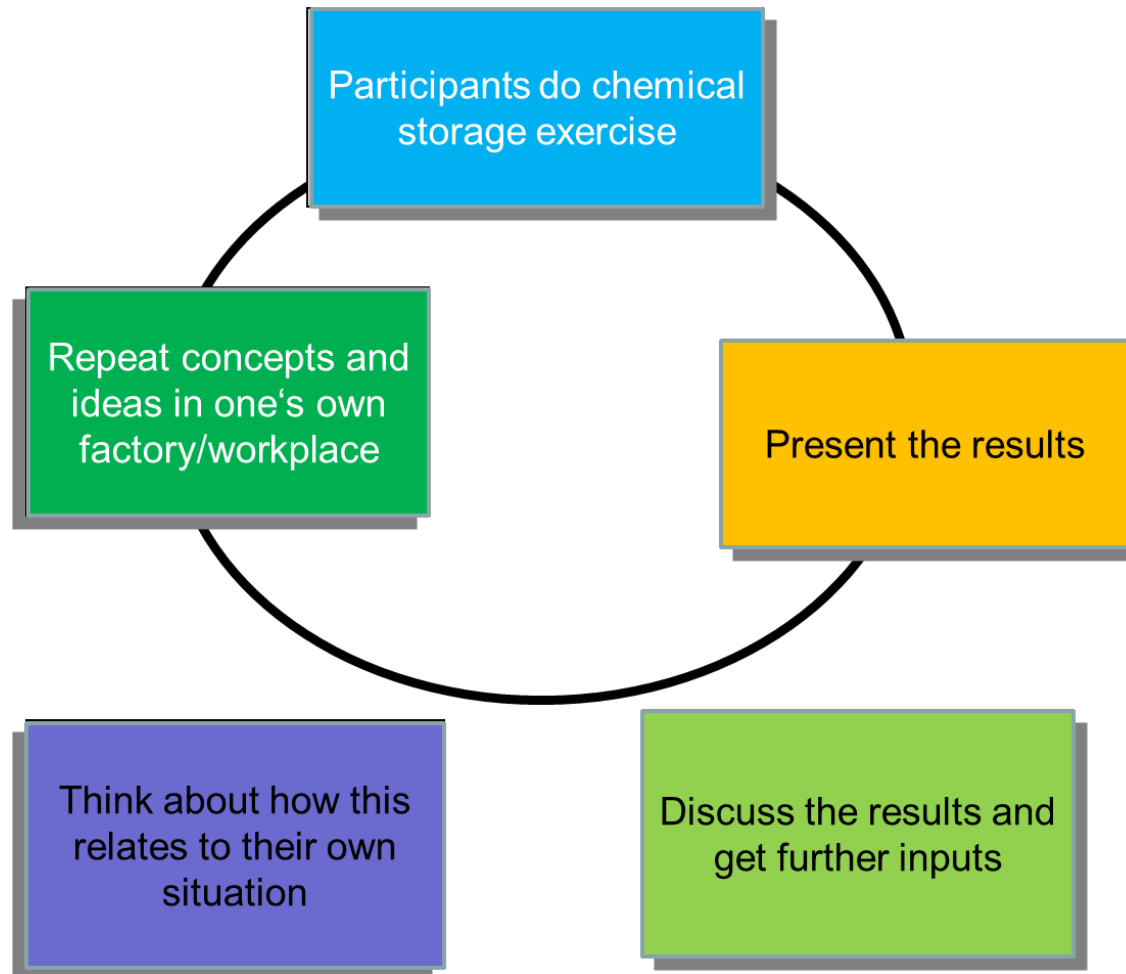
application /making personal experience 90%

The Experiential Learning Cycle



The Experiential Learning Cycle

Example - Safe Storage of Chemicals



Exercise

Situation

The management of the textile company „Beautiful Colours“ wants to engage an external trainer to help the company`s training ist workforce on chemical hazards and exposure to chemicals. The company has requested your help for the following tasks:

- Define learning objectives for this training
- Suggest suitable training delivery mode

Time: 30 minutes

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Maintain documents and records

What should be document and recorded:

- Dates when training events occurred
- Content summary or topics outline
- Training methods used (demonstration, drill, lecture, briefing ...)
- Names and qualifications of trainers
- Attendance records (name, department, topic/course name, date of training and attendee signature)
- Copies of performance verification and written tests, and test scores for all participants (as applicable)



Competence development

Where do you stand in your company?

- CM training needs identified?
- Training matrix (indicating target groups and training subjects/ objectices) available and maintained?
- Annual training schedule available and maintained?
- Training documentation and records maintained?
- Training effectiveness verified?
- Training programme reviewed and updated?

