Health and Safety Essentials

Lecture 17 – Health and Safety Training Programmes

George Steve Darmanin
MSc.OHSEM CMIOSH

Date: 19 March 2026

Undergraduate Diploma in
Occupational Health and Safety

✅ Recap Question 1

Why is accident investigation considered an important part of the occupational health and safety management system, even when not always explicitly required by legislation?

A. Because it allows employers to determine who was responsible for the incident
B. Because it replaces the need for risk assessments
C. Because it helps identify root causes and implement corrective actions to prevent recurrence
D. Because it is only required when an accident is reportable

✅ Recap Question 2

Which of the following BEST reflects the systems approach to accident investigation promoted by modern safety management models such as the Swiss Cheese Model?

A. Examining multiple layers of organisational, human, and technical failures that allowed the accident to occur
B. Identifying the worker who made the final mistake
C. Focusing only on equipment malfunction
D. Limiting investigation to the immediate cause of the accident

✅ Recap Question 3

During an accident investigation, a supervisor concludes that the incident occurred because the worker “was not careful enough.”

Why is this conclusion considered weak from a professional investigation perspective?

A. Because workers are never responsible for accidents
B. Because it stops the investigation at human error and fails to identify underlying systemic causes
C. Because supervisors should not be involved in investigations
D. Because only regulators can determine accident causes

Objectives of the Lecture

- ✅ Understand the legal obligations for H&S training in Malta.
- ✅ Differentiate between legal compliance and best practices.
- ✅ Identify different types of H&S training programmes.
- ✅ Develop an effective H&S training programme.
- ✅ Evaluate training effectiveness.

Leading to accidents?

❓ *Think of a workplace accident you know of.*

- Could better training have prevented it?
- What kind of training was missing?

- 📌 *Share your thoughts!*

Why is H&S Training Important?

- 📌 Prevents accidents and injuries.
- 📌 Improves compliance with legal obligations.
- 📌 Increases worker competence and confidence.
- 📌 Contributes to a strong safety culture.
- 📌 Reduces financial losses due to incidents.

Legal Framework – Key Legislation in Malta

📜 Cap. 646 –Health and Safety at Work Act

- Establishes employer responsibilities for training.
- Empowers OHSA to enforce compliance.

📜 SL 646.11 – General Provisions for OHS Regulations
📜 SL 646.24 – Work Equipment Regulations
📜 SL 646.13 – Personal Protective
📜 SL 646.10 – Prevention of Back Injuries aka Manual Handling Regulations
📜 SL 646.16 – Chemical Agents Regulations
📜 SL 646.27 – Construction Site Regulations And more.....

- 📝 *Employers must provide adequate and ongoing training!*

Employer & Employee Responsibilities

- Employer Duties
  - ✔ Provide appropriate and regular training.
    - On recruitment
    - when transferred or assigned new tasks
    - when new equipment or technology is introduced
    - Refreshers as may be needed (periodically, after identification from monitoring, accidents…)
-
  - ✔ Ensure training is understood (language, literacy).
  - ✔ Maintain training records.
  - ✔ Evaluate training effectiveness.

- Employee Responsibilities
  - ✔ Attend training and apply safety measures.
  - ✔ Report any hazards.
  - ✔ Follow safety instructions.

Breakout Activity – Legal Compliance

🛠️ Task: In breakout groups, choose an industry:

- Construction - Group 1
- Manufacturing - Group 2
- Hospitality - Group 3
- Healthcare – Group 4
- Transport & Distribution – Group 5
- Hospitality – Group 6

📝 Identify:

- What legal training is likely required and why do you think so?
- What are the risks of not training employees?

📢 *Each group presents findings!*

Types of H&S Training

📌 1. Induction Training – For new employees.
📌 2. Job-Specific Training – Role-related hazards
📌 3. Refresher Training – Regular updates.
📌 4. Emergency Response Training – Fire, first aid, evacuations.
📌 5. Behavioural Safety Training – Risk perception & decision-making.
📌 6. Competency-Based Training – Focus on skills, not just knowledge.

💬 *Which type of training is most common in your workplace?*

Training vs Competence

Training does not automatically equal competence.

- Competence requires:
  - knowledge
  - skills
  - experience
  - supervision
  - behavioural application
- Reference:
  ISO 45001 – Competence and Awareness

Training Needs Analysis (TNA)

Sources of training needs include:

- Risk assessments
- Accident investigations
- Legal requirements
- Equipment
- Audit findings
- Worker feedback
- Safety observations

Breakout – Choosing the Right Training

🛠️ Scenario:

A worker is injured because they weren't trained to use a machine correctly.

Examples:

- Bandsaw in an industrial workshop
- Forklift Truck in a busy warehouse
- Tail Lift on a delivery truck
- Moulding machine in plastic moulding industry

📢 Questions:

- How could the worker be injured?
- What type of training should they have received?
- How do you ensure that the training is suitable?

Developing an Effective H&S Training Programme

📌 Step 1: Identify training needs (tasks, risk assessments, incidents).

📌 Step 2: Set SMART learning objectives.

📌 Step 3: Choose training methods (toolbox talks, e-learning or in class, simulations...).

📌 Step 4: Deliver training (qualified trainers, engaging methods).

📌 Step 5: Evaluate effectiveness (assess application of learning).

SMART Learning Objectives

🎯 S – Specific
🎯 M – Measurable
🎯 A – Achievable
🎯 R – Relevant
🎯 T – Time-bound

💡 Example: *"By the end of this training, all machine operators will correctly identify and apply lockout/tagout procedures."*

Case Study – Poor Training Consequences

🚧 Incident: A material distribution worker suffered a back injury due to poor manual handling.

📢 Discussion:

1. What training should have been provided?
2. But the employer provided that training! What more should we look into?
3. The employer outsourced the training to a training agency. Is the employer still accountable?

📊 *Class shares insights!*

Break

Research on Training Effectiveness

Relative Effectiveness of Worker Safety and Health Training Methods

- Burke, M.J., Sarpy, S.A., Smith-Crowe, K., Chan-Serafin, S., Salvador, R.O. and Islam, G. (2006) *Relative effectiveness of worker safety and health training methods.* Journal of Safety Research, 37(4), pp.315–324.

Key Findings

- Training engagement significantly influences learning outcomes
- Passive methods (e.g. lectures, videos only)
  Effect size ≈ 0.55
- Moderately engaging methods (e.g. discussion, demonstrations)
  Effect size ≈ 0.74
- Highly engaging methods (e.g. simulations, hands-on practice)
  Effect size ≈ 1.46

➡️ More interactive training produced substantially stronger learning out

Research on Training Effectiveness

Training Duration

- More engaging training tended to be longer in duration.
- However, training length was only weakly related to learning outcomes.

➡️ Engagement mattered more than duration.

Knowledge Retention (Decay)

- Limited research examined how knowledge declines over time:
- Low-engagement training:
  Up to 50% knowledge decay over time (studies ranging from 1 week to 1 year)
- Moderately engaging training:
  About 15% knowledge loss after 4 weeks
- Highly engaging training:
  No measurable decay after 4 weeks in the available study

- ⚠️ Evidence on knowledge retention was limited and identified as a research gap.

Research on Training Effectiveness

- Behavioural Safety Outcomes
  - No statistically significant difference was found between training types in observed safety behaviour.

➡️ Knowledge gains do not always translate directly into behavioural change

Measuring Training Effectiveness

https://www.kirkpatrickpartners.com/the-kirkpatrick-model/

📌 What is the Kirkpatrick Model?

- ✅ A framework for evaluating the effectiveness of training programmes.
- ✅ Developed by Donald Kirkpatrick in the 1950s.
- ✅ Measures four levels of training impact:

4. Results – Has safety improved in the workplace?
3. Behaviour – Are they applying what they learned?
2. Learning – Did they gain knowledge and skills?
1. Reaction – Did participants find the training useful?

📝 *Helps ensure training leads to real, measurable improvement*

Level 1 – Reaction (Engagement & Satisfaction)

❓ Key Question: *Did trainees find the training useful and engaging?*

📌 Purpose:

- Understand how participants feel about the training.
- Identify areas for improvement.

📊 How to Measure:

- ✔️ Post-training surveys & feedback forms.
- ✔️ Trainer observation (participation levels).
- ✔️ Interviews with trainees.

💡 *Example:*

After a fire safety training, employees rate the session on engagement, clarity, and usefulness.

🔍 *Why it Matters:*

- High engagement = higher chance of knowledge retention.
- Helps improve future training sessions.

Level 2 – Learning (Knowledge & Skills Acquired)

❓ Key Question: *Did trainees actually learn what was intended?*

📌 Purpose:

- Measures increase in knowledge, skills, and competencies.
- Ensures training objectives were met.

📊 How to Measure:

- ✔️ Pre- and post-training quizzes/tests.
- ✔️ Hands-on demonstrations.
- ✔️ Role-playing scenarios.

💡 *Example:*

After manual handling training, employees complete a test to demonstrate proper lifting techniques.

🔍 *Why it Matters:*

- Ensures employees understand key safety concepts.
- Identifies knowledge gaps for future training improvements.

Level 3 – Behaviour (Application of Learning)

❓ Key Question: *Are employees applying what they learned in the workplace?*

📌 Purpose:

- Measures whether training leads to real changes in behaviour.
- Determines if employees are practicing safety procedures correctly.

📊 How to Measure:

- ✔️ Workplace observations & audits.
- ✔️ Supervisor feedback & performance reviews.
- ✔️ Follow-up assessments weeks/months after training.

💡 *Example:*

After PPE training, supervisors observe workers to check if they consistently wear the correct PPE.

🔍 *Why it Matters:*

- Training is only effective if employees apply it in real-world situations.
- Helps employers identify barriers to behavioural change (e.g., lack of resources or motivation).

Level 4 – Results (Impact on Workplace Safety)

❓ Key Question: *Did training improve workplace safety and performance?*

📌 Purpose:

- Measures long-term impact on workplace safety.
- Demonstrates return on investment (ROI) of training.

📊 How to Measure:

- ✔️ Reduction in accident and injury rates.
- ✔️ Fewer safety violations.
- ✔️ Increased productivity and compliance.

💡 *Example:*

After implementing machine safety training, accident rates decrease by 30% over six months.

🔍 *Why it Matters:*

- The ultimate goal of training is to improve safety and efficiency.
- Shows if the investment in training was worth it.

Breakout Exercise – Training Evaluation

📢 Task: In groups, design a training evaluation plan using Kirkpatrick's Model for:

- Fire Safety & Warden training
- PPE usage training
- Manual Handling training

📊 *Each group presents their plan!*

Challenges in H&S Training

🚧 Common Issues:

- ❌ Resistance from employees.
- ❌ Language/literacy barriers.
- ❌ Lack of engagement.
- ❌ Budget and or Time constraints.

💡 Solutions:

- ✔️ Link training to real incidents.
- ✔️ Use visuals & demonstrations.
- ✔️ Make training interactive (quizzes, role plays).
- ✔️ Use cost-effective methods (e-learning, peer-led training).

Limitations of training

Training cannot replace:

- good design
- engineering controls
- supervision
- safe systems of work

Can training compensate for poor machine guarding?

Optional:
Role Play – Overcoming Training Resistance

🎭 Situation:

A stubborn worker refuses to attend training, saying it's a waste of time.

📢 Task:

- One student plays the worker, another plays the safety officer convincing them why training is crucial.
- Rest of class provides feedback!

💡 *How do you convince resistant workers to engage?*

Conclusion & Final Discussion

- Key Takeaways:
  - ✔ H&S training is both a legal and moral responsibility.
  - ✔ Training must be effective, engaging, and regularly updated.
  - ✔ Evaluation ensures training is making a real difference.

📢 Final Question:

- What's ONE thing you will take from today's lecture and apply in real life?

21 ACADEMY

Undergraduate Diploma in Occupational Health and Safety