Writing Learning Objectives

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Cornell Pesticide Safety Education Program

YOUR Learning Objectives

- Define "learning objective."
- Explain the roles of learning objectives in developing training manuals and exams.
- State where the blank appears in the sample exam item provided.
- List the 3 basic requirements of a learning objective.

Learning Objective Defined

A *learning objective*
is a way of letting learners know
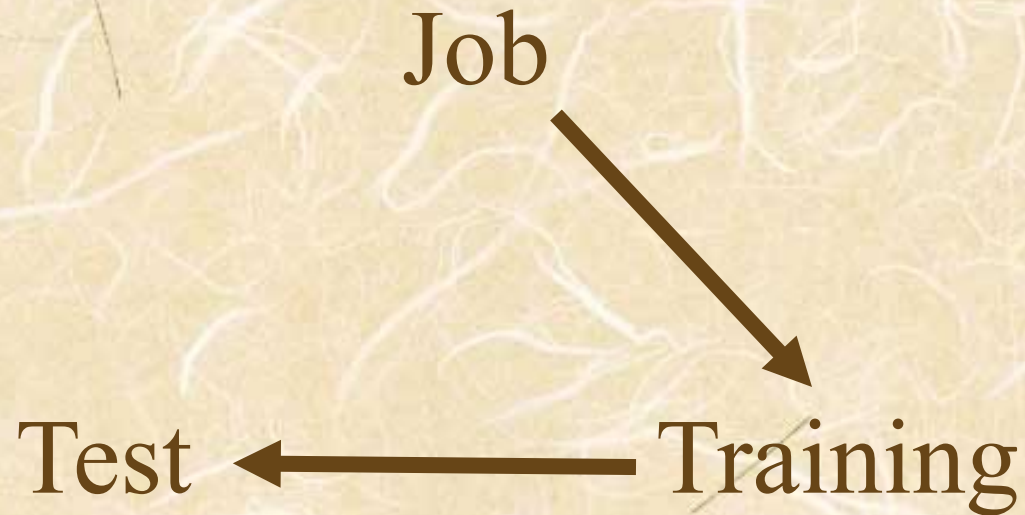what *we* expect of *them*.

The Roles of Learning Objectives
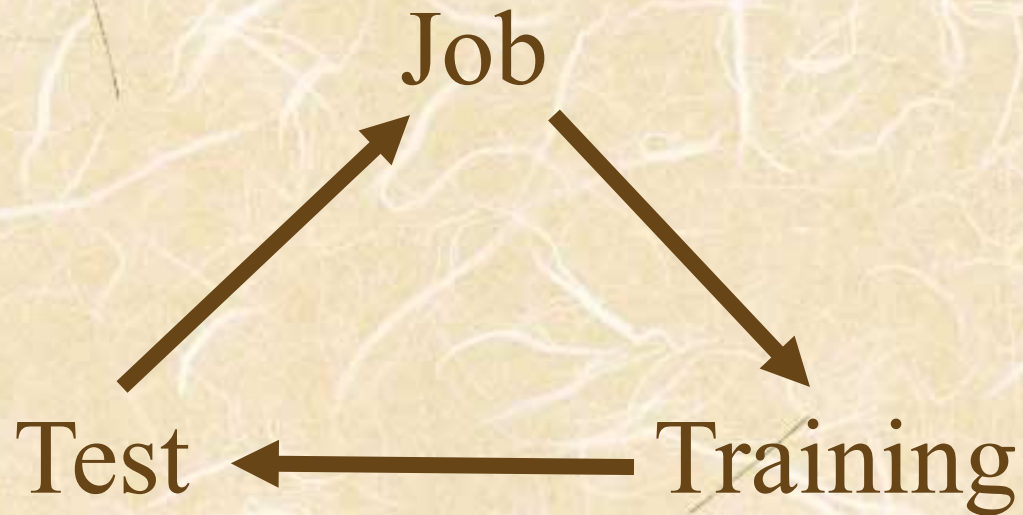
Job

The Roles of Learning Objectives

Job

Training

The Roles of Learning Objectives

Job

Test ← Training

The Roles of Learning Objectives

Job

Training

Test

Linking Job to Training

- Necessary Job Knowledge
  - Knowledge of how pesticides move off site (e.g., runoff, drift, volatilization)
- Training
  - Learning objective: Define pesticide drift.

Linking Training to Test

- Training
  - Learning objective: Define pesticide drift.
- Test item
  - Pesticide being carried out of the treatment area by air currents is called _____.
    A. Drift
    B. Runoff
    C. Overspray

Chapter 8: Pressure Treating Wood

Learning Objectives

- Explain why all the wood in a charge should have the same characteristics.
- Describe protections for workers:
  — When loading a charge into a cylinder
  — When sealing a cylinder door shut
  — If a cylinder door is not shut properly during a treatment
- List the steps in ensuring a cylinder door seals tightly.
- With respect to a preset:
  — Explain what it is.
  — State what it might be based on.
  — Tell why there may be limits to adjustments you can make.
- Tell what details about a charge you need to know prior to treatment and why.
- Describe how you can determine the volume (in cubic feet) of wood in a charge.

Learning Objectives:
3 Requirements

- Learning objective: Define pesticide drift.
  - Relates to knowledge or skill needed to perform the job
  - Uses action verb (measurable)
  - Addresses one measurable behavior per objective

Requirement 1: Relates to Required Job Knowledge or Skill

- Necessary Job Knowledge
  - Knowledge of how pesticides move off site (e.g., runoff, drift, volatilization)
- Training
  - Learning objective: Define pesticide drift.

Requirement 2: Uses Action Verb

- State in behavioral, or performance terms
  - Describes what the learner will be <u>DOING</u> when demonstrating achievement of the objective
  - Must allow us to measure performance

Action Verbs

Define performance, limit interpretations:

- Write
- State
- Identify
- Distinguish
- Calculate
- Describe
- Define

- Indicate
- List
- Compare
- Contrast
- Select
- Find
- Give (examples of)

<u>Do Not</u> Use Any of These!

Open to many interpretations, not measurable :

- Know
- Understand
- Be aware of

- Appreciate
- Learn
- Be familiar with

Do Not Use Any of These!

Open to many interpretations, not measurable:

- Know
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"Know what pesticide drift is."

- Pesticide being carried out of the treatment area by air currents.

- A leading cause of complaints against certified pesticide applicators.

- One reason to avoid applying pesticides on a windy day.

Open to interpretation

"Know the definition of pesticide drift."

- Then why not just say "Define pesticide drift?"
- Ask yourself what you want them to know, and then what they have to DO to show you they know it.

Use Appropriate Action Verb

- Job knowledge or skill: Knowledge of drift-reduction practices.

Use Appropriate Action Verb

- Wrong: Manage pesticide drift.
  - Action verb, but relates to field performance
  - Not measurable on a multiple-choice exam

Use Appropriate Action Verb

- Right: Tell how thickening agents reduce drift.
  - Action verb that relates to knowledge/skill
  - Measurable on a multiple-choice exam

Requirement 3: One measurable behavior per objective

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- Bad:
  - Describe the adverse effects of drift and tell who is held responsible when drift occurs.

- Reason:
  - If SMEs say this learning objective should be addressed on test, how does SLA know which part address?

Requirement 3: One measurable behavior per objective

- Bad:
  - Describe the adverse effects of drift and runoff.

Requirement 3: One measurable behavior per objective

- But this is ok:
  - Necessary job knowledge: Knowledge of variables that affect application rate.
  - Learning Objective: Tell how changing each of the following affects the spray rate:
    (a) Nozzle orifice size
    (b) Spray pressure
    (c) Ground speed

Tips

- Be concise

I said "Concise"

Understand environmental consequences of pesticide application while considering all relevant factors (e.g., types of terrain, drainage patterns, soil, presence of non-target organisms and endangered species, drift, weather, groundwater and surface water).

Tips

- Be concise
- Write at an appropriate reading level

Tips

- Be concise

- Write at an appropriate reading level

- Can have more than one learning objective for a single required job knowledge or skill

Task: Respond to Spills

- Necessary job knowledge:
  - Knowledge of spill control procedures.
- Learning Objectives:
  - Tell what constitutes a spill.
  - Determine when to report a spill to a government agency.
  - Describe the steps involved in responding to a spill.

Learning Objective Review

Define "learning objective."

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A learning objective is a way of letting trainees know what we expect of them.

Learning Objective Review

List the 3 basic requirements of a properly written learning objective.

Learning Objective Review

List the 3 basic requirements of a properly written learning objective.

- Relates to knowledge or skill needed to perform the job
- Uses action verb
- Addresses one measurable behavior

Learning Objective Review

State where the blank appears in the sample exam item provided.

Learning Objective Review

State where the blank appears in the sample exam item provided.

Pesticide being carried out of the treatment area by air currents is called _____.

Learning Objective Review

Tell whether the 3 choices from the sample exam item were listed in alphabetical order.

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Tell whether the 3 choices from the sample exam item were listed in alphabetical order.

    A. Drift

    B. Runoff

    C. Overspray