In vain have you acquired knowledge if you have not imparted it to others.
Deuteronomy Rabbah, (c.900, commentary on the Book of Deuteronomy)

In today's environment, hoarding knowledge ultimately erodes your power. If you know something very important, the way to get power is by actually sharing it. *Joseph L. Badaracco, *1948, professor of Business ethics at Harvard Business School*

Effective On the Job Training
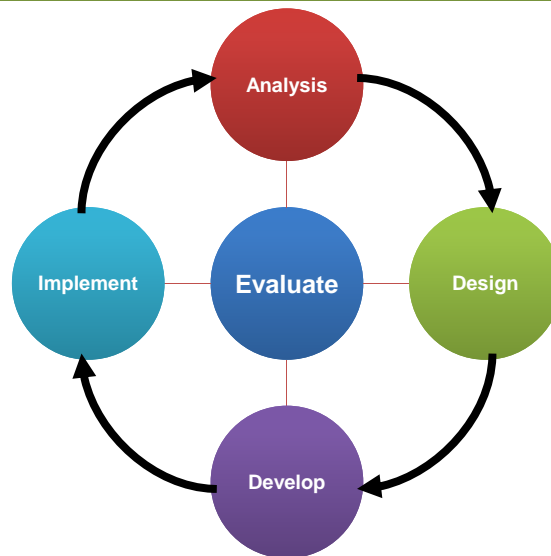## Desire + Knowledge +Tools

Share your knowledge. It's a way to achieve immortality.
*Dalai Lama
(1357-1419, high lama of Tibetan Buddhism)*

Often, we are too slow to recognize how much and in what ways we can assist each other through sharing expertise and knowledge.
*Owen Arthur, *1949, Barbadian politician*

ADDIE Training Model

Analysis

Needs Assessment

Who is the Audience?

- Staff who need OJT
- Management who wants to verify progress and competency

What is the overall expected outcome of the session (big picture)?

What are the constraints?

Is there a budget?

How much time do we have?

Analyze the tasks involved!

Is there a curriculum or PLAN for all tasks and procedures?

When

- During probation
- During orientation
- When implementing a new procedure or measurement area
- When refresher training is need or updates occur
- _____
- _____

Design

Establish Learning Objectives – Bloom's Taxonomy

Break procedures down to the level of observable tasks and steps

Evaluate and Select "Best" Delivery (Teaching Methods) and Techniques (Activities)

Evaluate – what is "best" approach to meet objectives? (Assessment)
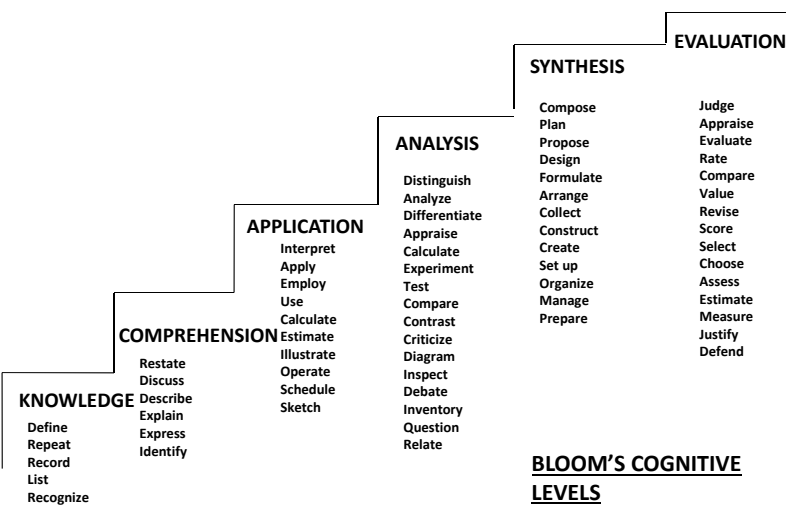
What knowledge and skills are critical for staff?
Plan?
Curriculum?

What can be taught best as OJT?
Task Break Down Methods

Task Breakdown - Scenario

Learning Outcomes

EVALUATION

SYNTHESIS

ANALYSIS

APPLICATION

COMPREHENSION

KNOWLEDGE

KNOWLEDGE
Define
Repeat
Record
List
Recognize

COMPREHENSION
Restate
Discuss
Describe
Explain
Express
Identify

APPLICATION
Interpret
Apply
Employ
Use
Calculate
Estimate
Illustrate
Operate
Schedule
Sketch

ANALYSIS
Distinguish
Analyze
Differentiate
Appraise
Calculate
Experiment
Test
Compare
Contrast
Criticize
Diagram
Inspect
Debate
Inventory
Question
Relate

SYNTHESIS
Compose
Plan
Propose
Design
Formulate
Arrange
Collect
Construct
Create
Set up
Organize
Manage
Prepare

EVALUATION
Judge
Appraise
Evaluate
Rate
Compare
Value
Revise
Score
Select
Choose
Assess
Estimate
Measure
Justify
Defend

BLOOM'S COGNITIVE LEVELS

Learning Objectives

Definition: *A statement in specific and measurable terms that describes what the learner will know or be able to do as a result of engaging in a learning activity.*

1. Must be learner centered
2. Select a _____ for performing the task (action).
   Determine if the *verb* you have chosen best describes the type of behavior that the learners need to display after training (see Bloom's Taxonomy).
3. Under what conditions (resources) must the task be performed?
4. Determine to what standards (quality) the task must be performed.

Example:
- Using the presented procedure, you will accurately list at least three characteristics that are required in the uncertainty analysis and reporting process.

VERBS…..
Avoid generic "Know" and "Understand"

Know
- describe, identify, recall, arrange, define, duplicate, label, list, memorize, name, order, recognize, reproduce state.

Comprehend
- comprehend, give example, classify, describe, discuss, explain, express, identify, indicate, locate, recognize, report, restate, review, select, translate,

Apply
- apply, change, construct, compute, choose, demonstrate, dramatize, employ, illustrate, interpret, operate, practice, schedule, sketch, solve, use, write.

Analyze
- analyze, break down, relate, appraise, calculate, categorize, compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, make inferences, find evidence, test.

Synthesize
- summarize, arrange, combine, categorize, assemble, collect, compose, construct, create, design, develop, formulate, manage, organize, plan, prepare, propose, set up, write.

Evaluate
- appraise, interpret, argue, assess, attach, compare, defend, estimate, judge, predict, rate, core, select, support, value, evaluate, prove, deduct.

Learning Objectives

Elements:

1. Learner centered
2. Verb (action)
3. Conditions (resources)
4. Standards (quality)

Activity – What do you want (your employee) to know or do? Is there an SOP or EPO to follow?

Example VERBS:

- Read (the SOP or EPO)
- Pour (water)
- Demonstrate (for another staff or manager)
- Evaluate (against tolerance)
- Read (a meniscus)
- Measure (temperature)
- Measure (weight)
- Calculate (volume)
- Calculate (density)
- Evaluate (ID)
- Test (coefficient of cubical expansion)
- Identify (material)
- Assess design (vs specifications)

Activity – What do you want (your employee) to know or do?

At the end of this session,
you will be able to:

Reminder:
1. Learner centered ☑
2. Verb (action)
3. Conditions (resources)
4. Standards (quality)

Alignment is Critical. Best Methods are Critical.

Learning Outcome	Instructional Method (Activity)	Assessment Method And Feedback
Participants will be able to use the references provided in this lecture, to successfully Perform this SOP/EPO	Reading? Video? Lecture? Demonstration? Perform?	Quiz? Q&A? Observations? Essay?
Measurement SKILL	Read, Demonstrate, Observe, Independent	??
Measurement SKILL	SO DO TO	??

Assessment of Learning Outcomes
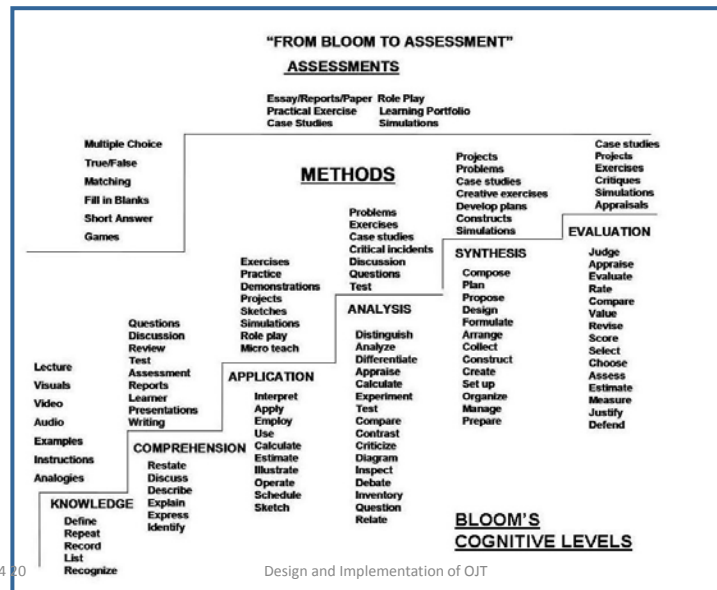
Develop Materials for SKILLS Training

Develop Content *(PowerPoint slides??? Checklist???)*
- Document objectives and expectations
- Develop a skills checklist for observations
- Student handouts
- Case studies, resources, props, logistics for hands-on
- Additional learning tools and aids

Evaluate and assess – will it achieve objectives?

Convert technical content (e.g., an EPO or an SOP) – difficult? Easy?

Two more models
    4-step Skills Method
    SO-DO-TO

Implement

Logistics – based on location

Facility

Equipment & standards – maintenance, updating, shipping

Presenting or facilitating the OJT– mentor/trainer development (key Knowledge, Skill, Attitude: KSA)

- Know the technical content (latest and greatest) OR _____

- Be able to develop objectives, select strategies
- Be able to present and interact effectively and provide feedback (positive and corrective)
- Focus on objectives

- Care
- Patience

Evaluate

- Evaluate all steps in the ADDIE processes
- Evaluate learning at all stages (student assessments)
- Conduct Evaluation of OJT Facilitator and Content

ADDIE Training Model
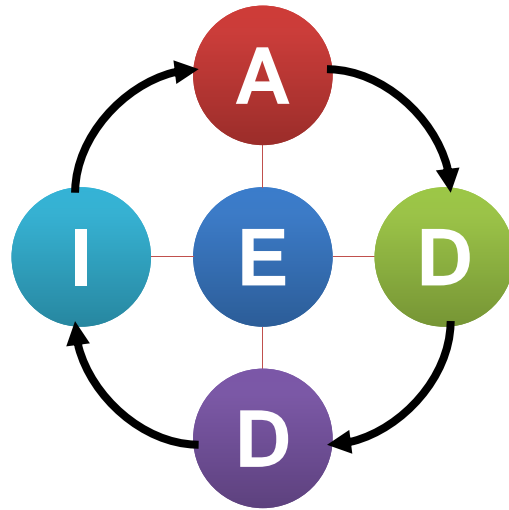
OJT Resource job aids

Skill Assessment – *think* through the tasks

Task Break-down

4-Step Process for OJT

See One, Do One, Teach One

OJT Planning and Documentation – document the plan, document the observations, provide feedback, maintain evidence

More information: NCSLI Recommended Practice 17

4-Step Skills Training Method

1. Prepare the worker.

2. Demonstrate and Explain the operation.

3. Give the learner Practice.

4. Follow up.

See One, Do One, Teach One (3 steps ---- over time)

See One (Step 2 in the 4 step process)

Do One (Step 3 in the 4 step process)

Teach One (Taking it a step further!!!) – the critical concept is that "you only really learn something once you have to teach others"