



National Conference on Weights and Measures
"That Equity May Prevail"

Professional Development Committee

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PDC Reference Key

400 INTRODUCTION

410 EDUCATION

410-1 Professional Certification Program

410-2 Instructor Improvement

410-3 Recommended Topics for Conference Training

420 PROGRAM MANAGEMENT

420-1 Safety Awareness

420-2 PDC Publication

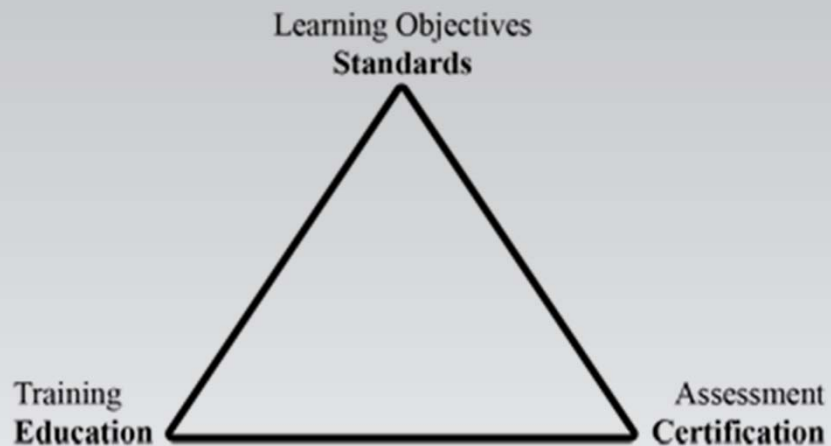
APPENDICES



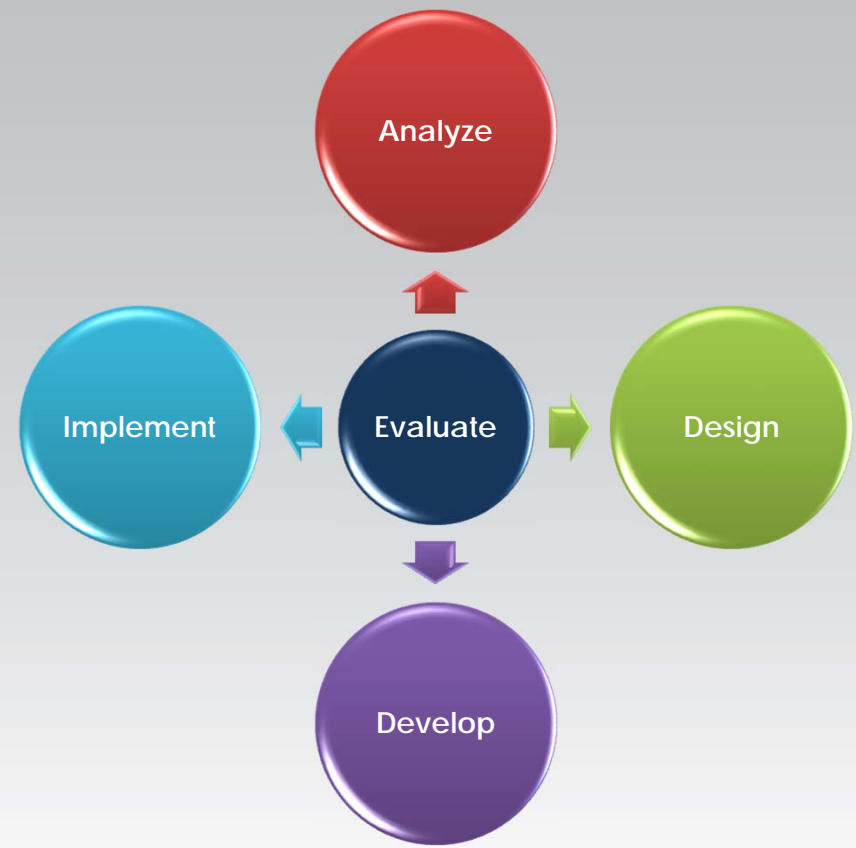
NCWM Certification Plan

410-1

Certification Triangle



Standard ADDIE ISD Model





Important Terminology

410-1

- Body of Knowledge (BOK) – all or part of expectations
- Module – Subset of the BOK
- Curriculum – Listing of NCWM Modules
- Learning Objectives
 - Terminal Objectives – Broad goals
 - Enabling Objectives – Specific measurable steps
- Learning Activities
- Assessment
- Certification



NCWM Role

410-1

- Form consensus on the learning objectives suitable to a basic professional, i.e. ~ 12 months on job.
- Publish those objectives so that trainers can train to those “standards,” focus on WHAT a professional should know.
- NCWM does NOT tell you how to train or what training activities to use. You know what’s best for your staff.
- NCWM has Subject Matter Experts in the field create examinations to test if candidates have met the learning objectives to provide a uniform, objective assessment.



Subject Matter Experts Role

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Critical Role in Professional Certification Program

- Formalize Learning Expectations Through the BOK
- Create New Exam Questions Matching the BOK
- Review Submitted Exam Questions
- Maintain Integrity of the Program
(e.g. do not disclose materials written or reviewed)
- May Use Web Meetings to Train SME's and Review Exam Questions



Certification Coordinator Role

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Activity	Coordinator
Review, Revise, Format BOK	X
Draft Questions	(X)
Review Questions (each SME gets only 25% of the bank)	(X)
Review Questions as Indicated From SME Responses	X
Final Questions Review (typically difficult or controversial)	X
Final Edit, Send Questions to NCWM	X
Review Exam Performance	X



Jurisdiction / Company Role

410-1

- Use the NCWM standards, i.e. Learning Objectives, in design, development and implementation of training
- Focus on training to foster success in the job
- DO NOT focus on training to pass the exam!
- If all do their part,

Job Success = Exam Success



Basic Level – 12 Months with Training and Experience

410-1

Typical Professional Development





Professional Certification Exam Development

410-1

Certification	Status
Retail Motor Fuel Devices	Posted
Small Capacity Scales Class III	Being Posted
Package Checking Basic	Being Posted
Vehicle Tank Meters	Question Drafting
Medium Capacity Scales	In Queue
Large Capacity Scales	In Queue
LPG Liquid Metering Devices	In Queue
Price Verification	In Queue



Exam Development Process

410-1

- PDC sets priorities for Certifications
- PDC defines modules included in the certification
- Small team drafts BOK's for each module (as needed)
- Large SME team reviews BOK's and revises (as needed)
- SME's draft test questions based on BOK's
- Draft questions collated and edited (spelling)
- SME's review subset of the questions for consistency with the BOK
- Coordinator compiles/collates comments



Exam Development Process

410-1

- Coordinator makes fixes/edits from comments
- Coordinator identifies questions for additional review
- Web-meetings held to conduct final review
- Question banks submitted to NCWM HQ & Exam posted
- Exam results reviewed
- SME team resolves conflicts/errors in questions
- As regulations change, existing exams checked for conformance with current requirements, i.e. questions revised, deleted, or new questions added



What to Expect on Exams

410-1

- Questions that deal with a single learning objective.
- Question should include all information required to find the answer, with no extraneous information.
- No trick questions. Questions should be clear and unambiguous, and based on an enabling objective from the BOK.
- Questions should represent real world situations that a basic inspector/service technician might encounter.
- Answer based solely on the information provided.



Member Benefit

410-1

- Exams are free for NCWM members
- Registration for an exam entitles you to a retry if you fail on the first attempt.
- Your results on an exam are confidential. Only you and headquarters staff see your results.



Instructor Improvement

Item 410-2

Trainer Roles and Goals

- Utilize Professional Certification Program Curriculum Work Plan Modules
- Utilize Professional Certification Program for Subjects (e.g., Retail Motor Fuel Dispensing Systems, Basic Package Labeling/Checking, Small Capacity Scales)
- Train Using Adult Learning Methods and Training Materials apply “*ADDIE*” principles
- Familiarize Students with Test Format
- Assess Test Results and Proficiency Improvement
- Self-Assess



Converting Technical Material to Training

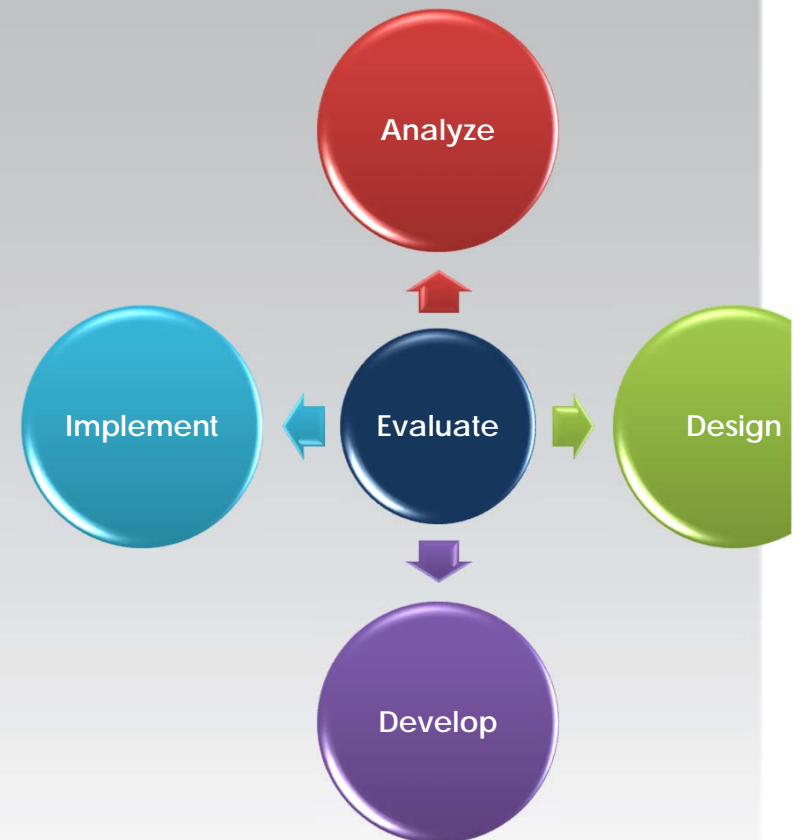
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Analysis Phase

- Who is to be trained?
- Why is training necessary, e.g. new employee, new material, performance failure, necessity for the job?
- Who will deliver the training?
- How will the training be delivered, venue?

Based on ADDIE model and paper by G. Harris (NIST)

Standard ADDIE ISD Model





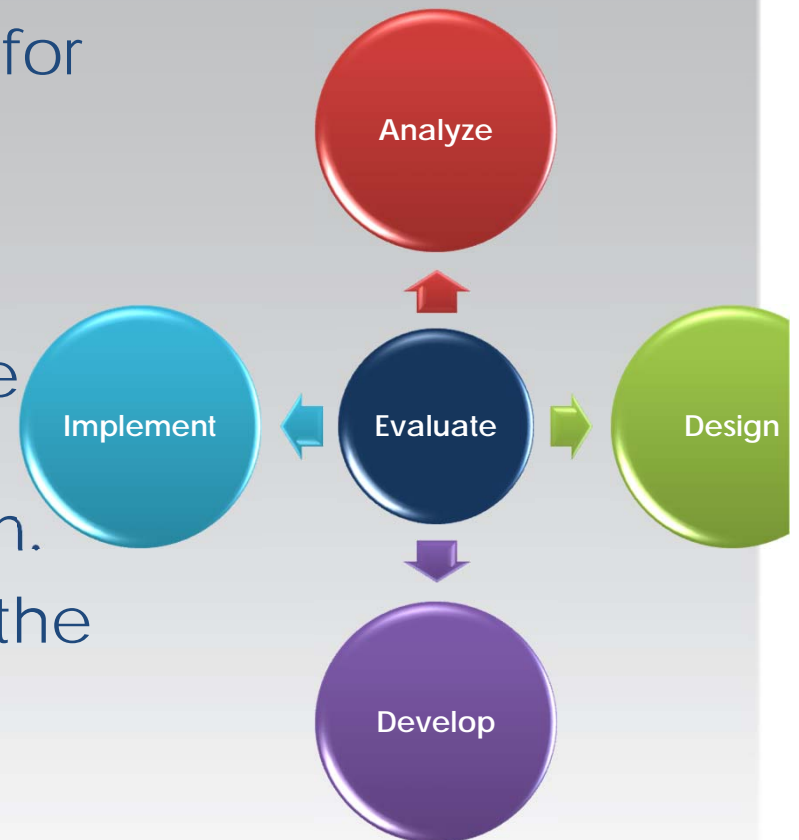
Converting Technical Material to Training

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Design Phase

- Define the learning objectives for your training. (Use the NCWM Modules for uniformity)
- Define objectives using active verbs to describe measureable outcomes for knowledge, understanding and application.
- Match the learning activity to the objective to maximize adult learning. Maximizes adult learning.

Standard ADDIE ISD Model





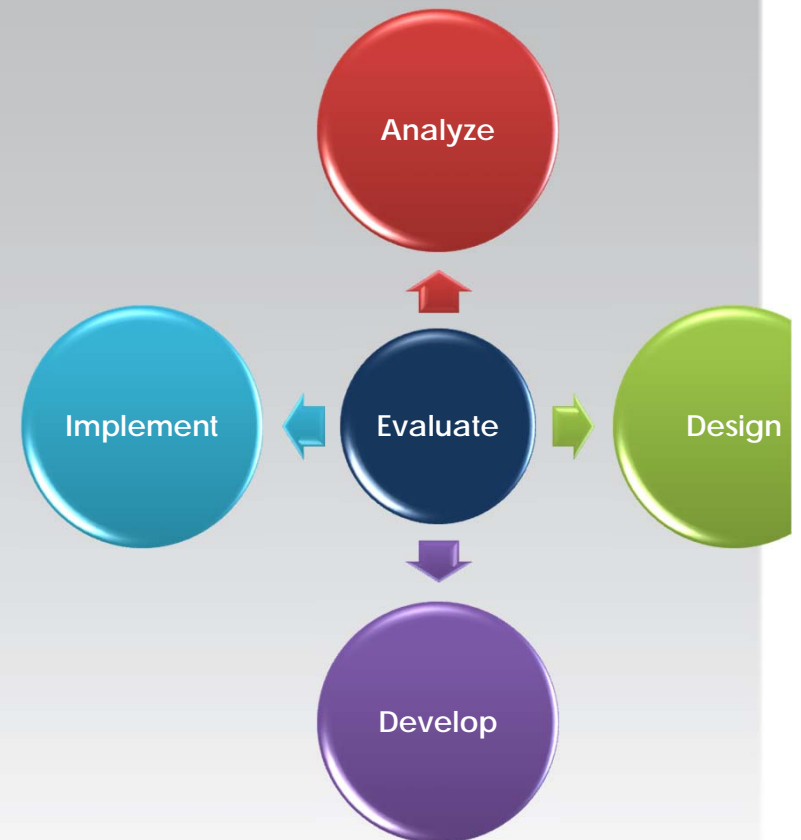
Converting Technical Material to Training

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Development

- Trainer preparation – worth every minute spent
- Outline of learning activities (lesson plan)
- Presentation notes, handouts, case studies
- Setting up the venue to maximize learning
- Being aware of time constraints

Standard ADDIE ISD Model





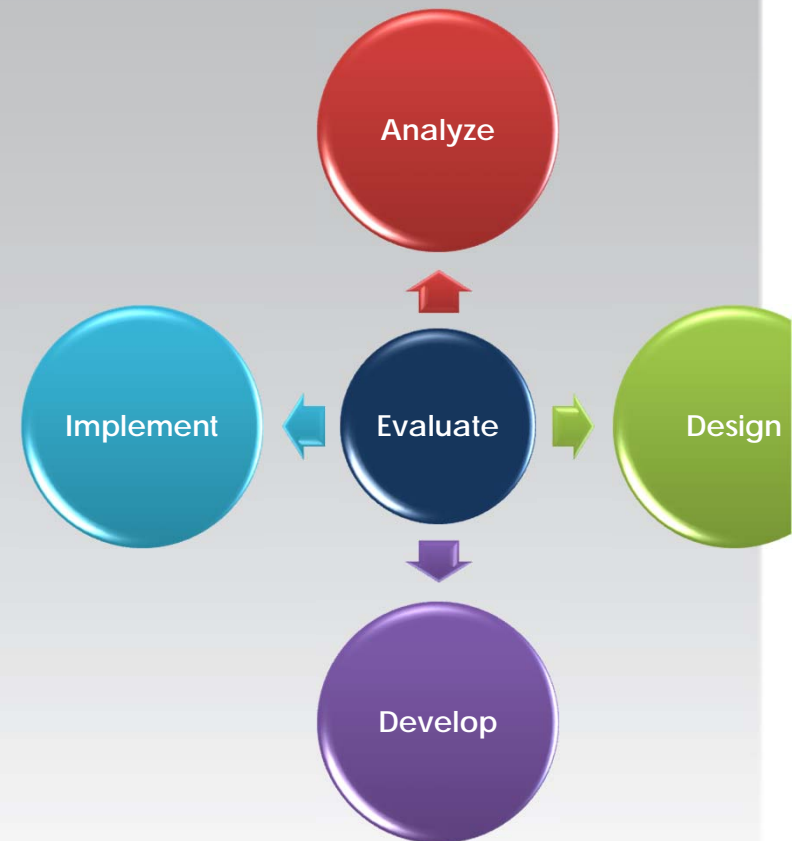
Converting Technical Material to Training

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Implement

- Set up and conduct each of the planned learning activities
- Seek out learners reactions
- Ask learners to restate what they learned (review)
- Ask learners to comment on how they will employ what the learned on the job (feedback)

Standard ADDIE ISD Model





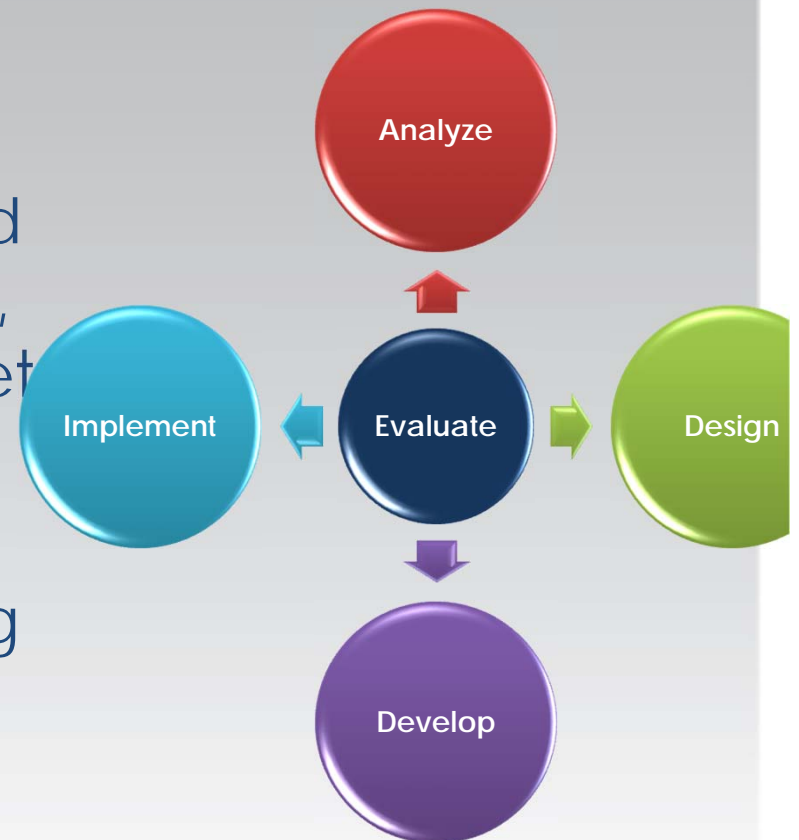
Converting Technical Material to Training

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Evaluate

- Trainer assessing progress
- Trainer should evaluate short term success after delivery and learn from every training effort, i.e. did the learners seem to get the material by the end of the session?
- Trainer should also look for long term job improvement, i.e. did the training actually improve performance on the job?

Standard ADDIE ISD Model





Recommended Training Topics

410-3

- Marketplace Surveys**
- Auditing the Performance of Field Staff
(Mr. Wotthlie, MD, volunteered to lead the session)
- Alternative Fuels
(Fuel Volatility, Ethanol Blending, and Biodiesel Blend Issues)
- Device Inspections Using a Sampling Model
- Emerging Issues
- Ergonomics
(Including Proper Lifting Techniques, Back and Stress Techniques and Office Ergonomics)



Recommended Training Topics

Item 410-3

- Public Relations^{**}, Specifically Dealing with Aggressive/Angry People (recommended by the SWMA)
- General Safety Issues (recommended by the WWMA)
- Economic Justification of Weights and Measures Programs^{**} (recommended by the WWMA)
- Training the Trainer in Adult Learning Techniques
- How to Conduct and Analyze a Marketplace Survey^{**}



Recommended Training Topics

Item 410-3

- Customer Service **
(recommended by the WWMA)
- Ethics
(recommended by the CWMA)
- Automatic Temperature Compensation Testing for Field Inspectors
- Hydrogen Measuring Systems
- *NIST Handbook 44* Scale Code Tare Changes
- Wet Tare/U.S. Department of Agriculture Issues
- Moisture Loss



Safety Awareness

Item 420-1

The committee will continue to ask the regions to prepare articles for NCWM Newsletter and has revised the schedule as follows for future issues. The committee plans to notify the Regional Safety Liaisons as their assignment date approaches.

Association	Issue	Publication Date	Article Deadline
CWMA	2011, Issue 3	September	July 22, 2011
NEWMA	2012, Issue 1	February	January 16, 2012
SWMA	2012, Issue 2	May	April 16, 2012
WWMA	2012, Issue 3	September	July 16, 2012

Future Concept: Creating a compilation of Right to Know Resources to assist states in meeting OSHA and state requirements.



PDC Web Page Revisions

Item 420-2

- "Get Professional Certification" page as NCWM splash page
- Committee Chair will be the point person for adding documents to this page
- Professional Certification Program highlighted and document access by SME's and the membership
- PDC special page for working documents
- Instructor Improvement – document archive for people who are interested in professional certification training material, resources, and PDC ongoing work



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Questions?



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Thank You