ANSI Z490.1 - 2024

Criteria for Accepted Practices in Safety, Health, and Environmental Training

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ASSP

- National Capital Chapter President & Past-President
- Region VI 2022 SPY & 2026 ASSP SPY
- ASSP Advisory Group
- ANSI Z490.1, Z590.6, Z10, US TC 283, ANSI Z16

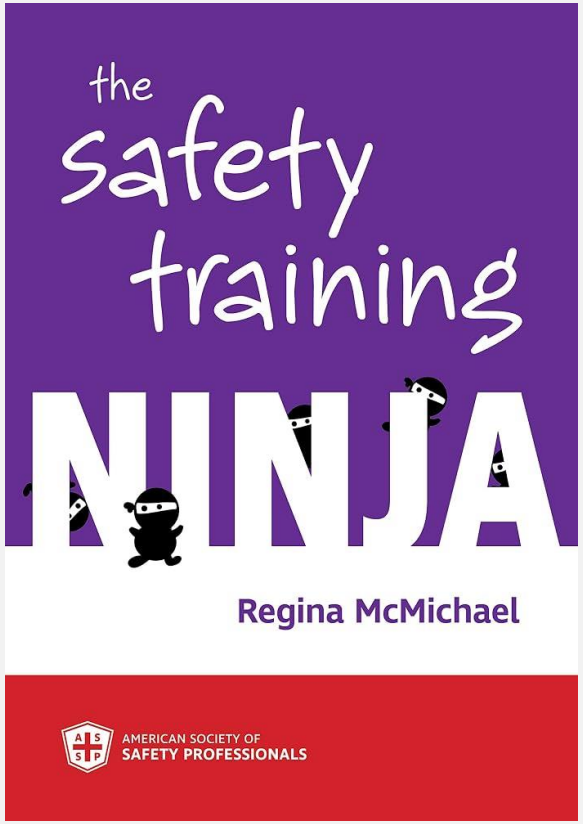


THE TEAM

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- Jose Perez, CSHM, CIT, SMS, OHST, CHST
- Alex Reed, M.Ed., CIT
- Michael Sugarman

THE PURPOSE OF TRAINING

- "It's not about you – it's about them!" – Regina McMichael
  - Provide training that fills a knowledge, skills, and attitudes gap



REVISED Z490.1-2024



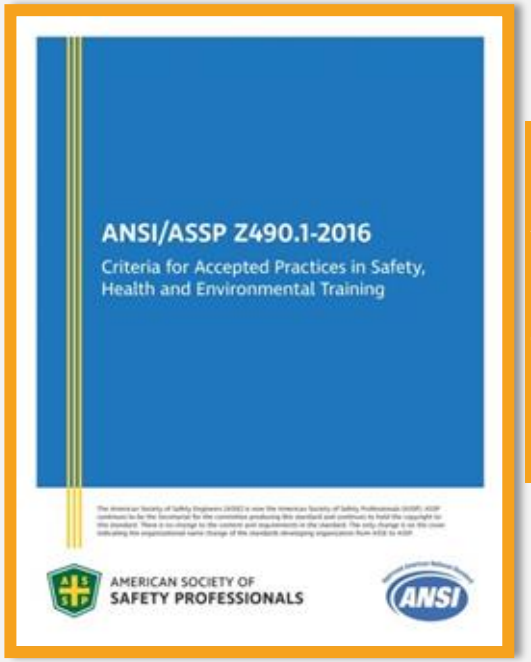
SIGNIFICANT CHANGES IN REVISED Z490.1-2024

- Merging of ANSI/ASSP Z490.1-2016 ANSI/ASSP Z490.2-2019.
- Creation of a new section on organizational responsibilities with criteria for providing resources for SH&E learning management systems to ensure competency.
- Expanded the concept of training to learning events.
- Expanded criteria about the roles and functions of training providers.

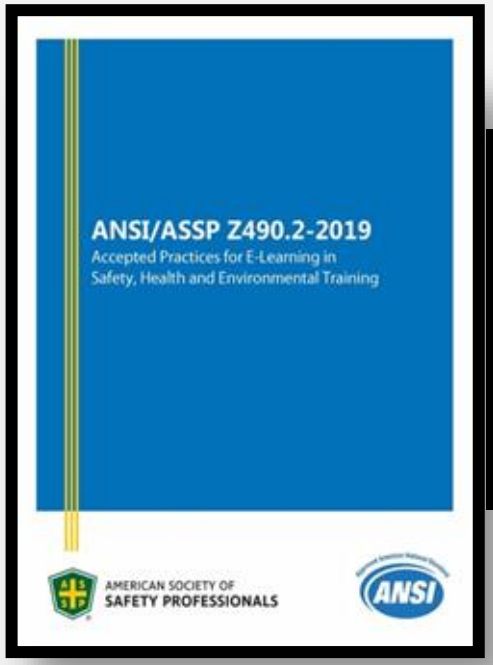
SIGNIFICANT CHANGES IN REVISED Z490.1-2024

- Alignment of the standard with the ADDIE model for instructional systems design.
- Enhanced language for learner-focused engagement, diversity, equity, and inclusion.
- Revised Annex A which provides explanatory text that is aligned with the revised sections of the standard to enhance understanding of requirements and effective accepted practices.
- Creation of an Implementation Guidance Manual to assist users of Z490.1-2023.

MERGING Z490.1 & Z490.1



Z490.1-2016
Criteria for Accepted Practices in Safety, Health and Environmental Training



Z490.2-2019
Accepted Practices for E-Learning in Safety, Health and Environmental Training



3.0 ORGANIZATIONAL RESPONSIBILITIES

- **3.1 Competency**
- **3.2 Communication**
- **3.3 Resources**

Competence is the demonstrated ability of a learner to apply knowledge, skills, and/or attitudes to achieve the learning outcomes.

Achieved or demonstrated by:

- education
- training
- mentoring
- experience
- certification
- licensing
- performance assessment

WHAT DOES "COMPETENCE" MEAN?

THE COMPETENCE MODEL

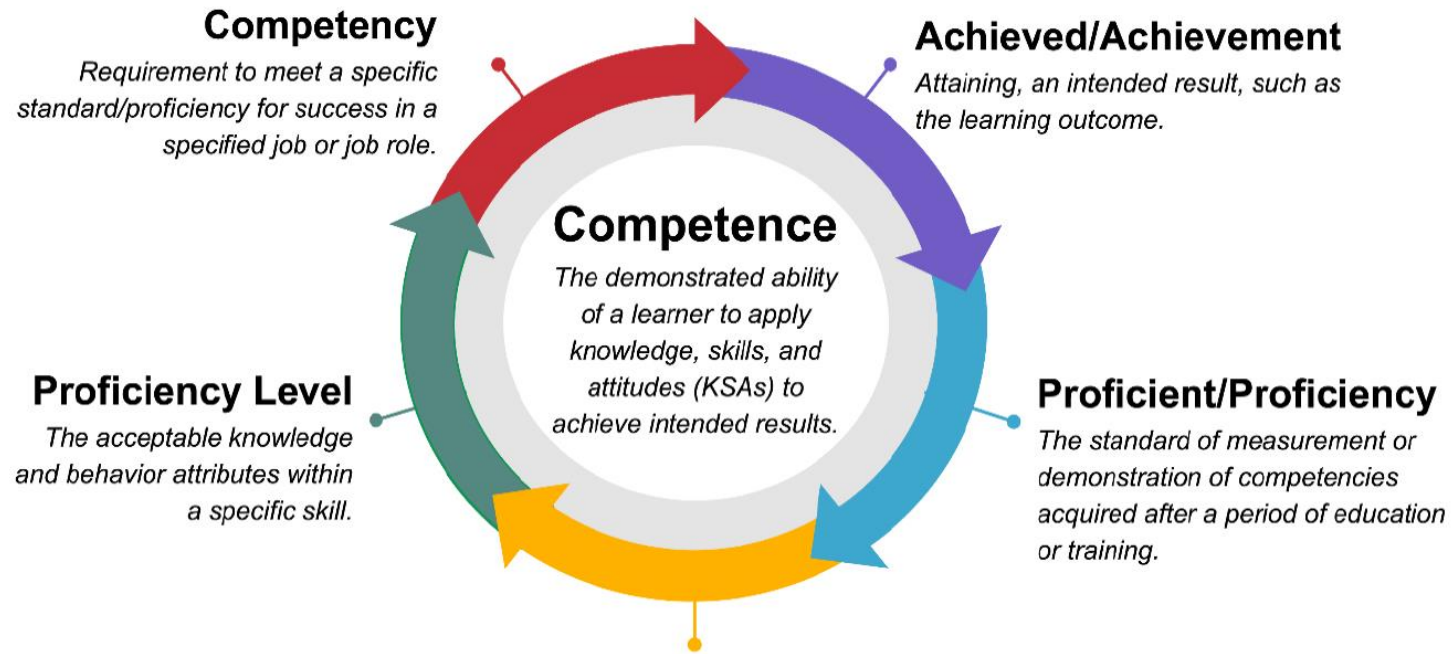


Figure 2, Competence Model

3.3 RESOURCES

Organizations are to provide:

- Financial, human, and organizational resources for all elements of the learning system
- Integrate the learning system and events into other business activities, systems, and processes
- Consider performance outcomes
- Determine available technology
- Evaluation training materials and procedures
- Allocate appropriate time for providers to develop training and learners to complete training

LEARNER ACCOMMODATIONS

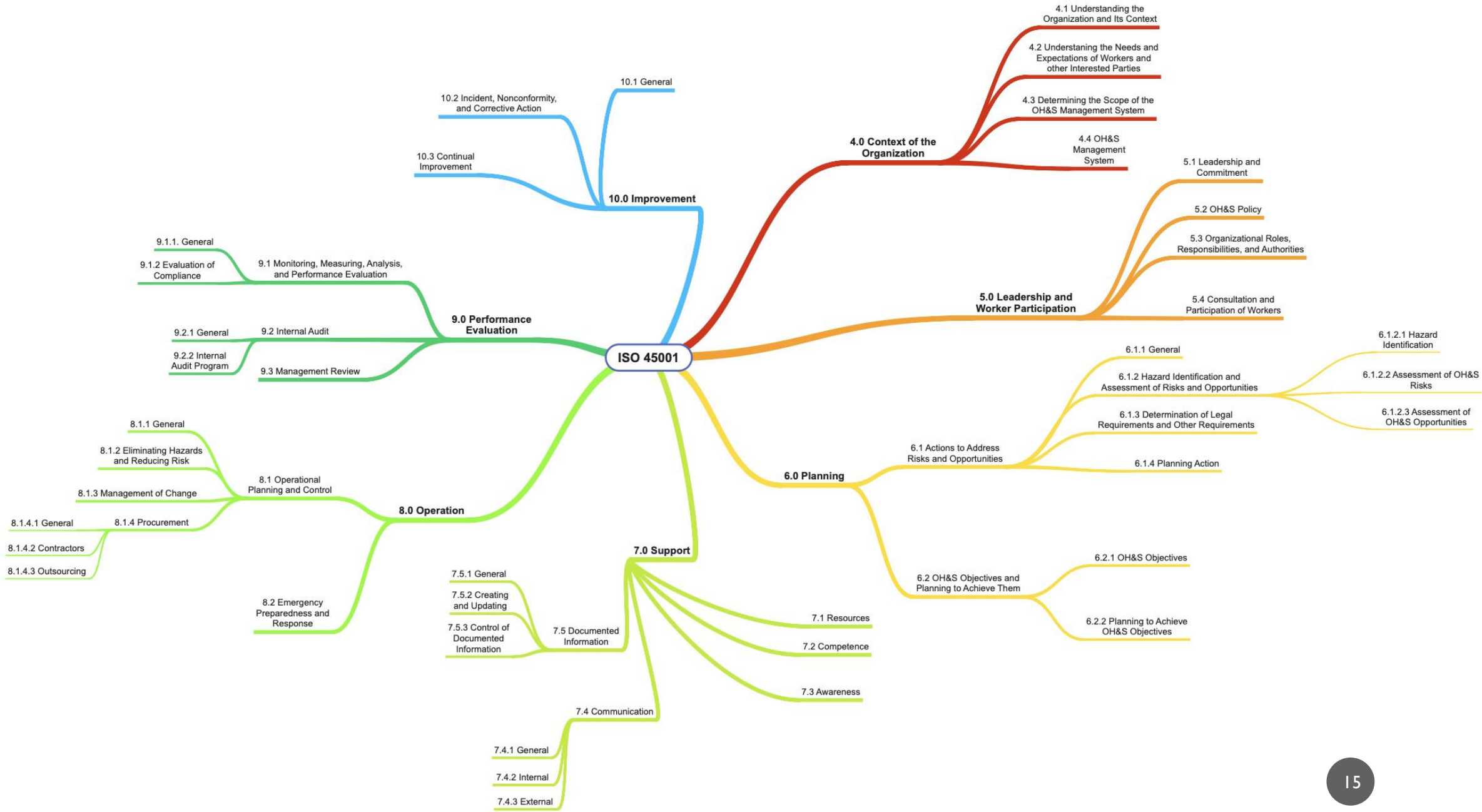
3.1 Barriers to Participation

- Barriers to Participation can include physical, cognitive, and unapparent disabilities, training on uncompensated time, relevance of training, scheduling, training environment, and literacy and language issues

6.5 Learning Environment

- Accommodates learners' needs
- Considers human factors
- Accommodations should represent reasonable modifications to mitigate physical, psychological, or social barriers.

THE SH&E LEARNING SYSTEM


ISO 45001
4.0 Context of the Organization
4.1 Understanding the Organization and Its Context
4.2 Understaning the Needs and Expectations of Workers and other Interested Parties
4.3 Determining the Scope of the OH&S Management System
4.4 OH&S Management System
5.0 Leadership and Worker Participation
5.1 Leadership and Commitment
5.2 OH&S Policy
5.3 Organizational Roles, Responsibilities, and Authorities
5.4 Consultation and Participation of Workers
6.0 Planning
6.1 Actions to Address Risks and Opportunities
6.1.1 General
6.1.2 Hazard Identification and Assessment of Risks and Opportunities
6.1.2.1 Hazard Identification
6.1.2.2 Assessment of OH&S Risks
6.1.2.3 Assessment of OH&S Opportunities
6.1.3 Determination of Legal Requirements and Other Requirements
6.1.4 Planning Action
6.2 OH&S Objectives and Planning to Achieve Them
6.2.1 OH&S Objectives
6.2.2 Planning to Achieve OH&S Objectives
7.0 Support
7.1 Resources
7.2 Competence
7.3 Awareness
7.4 Communication
7.4.1 General
7.4.2 Internal
7.4.3 External
7.5 Documented Information
7.5.1 General
7.5.2 Creating and Updating
7.5.3 Control of Documented Information
8.0 Operation
8.1 Operational Planning and Control
8.1.1 General
8.1.2 Eliminating Hazards and Reducing Risk
8.1.3 Management of Change
8.1.4 Procurement
8.1.4.1 General
8.1.4.2 Contractors
8.1.4.3 Outsourcing
8.2 Emergency Preparedness and Response
9.0 Performance Evaluation
9.1 Monitoring, Measuring, Analysis, and Performance Evaluation
9.1.1. General
9.1.2 Evaluation of Compliance
9.2 Internal Audit
9.2.1 General
9.2.2 Internal Audit Program
9.3 Management Review
10.0 Improvement
10.1 General
10.2 Incident, Nonconformity, and Corrective Action
10.3 Continual Improvement

Risks and Opportunities

6.1.4 Planning Action

6.0 Planning

6.2.1 OH&S Objectives

6.2 OH&S Objectives and Planning to Achieve Them

6.2.2 Planning to Achieve OH&S Objectives

7.0 Support

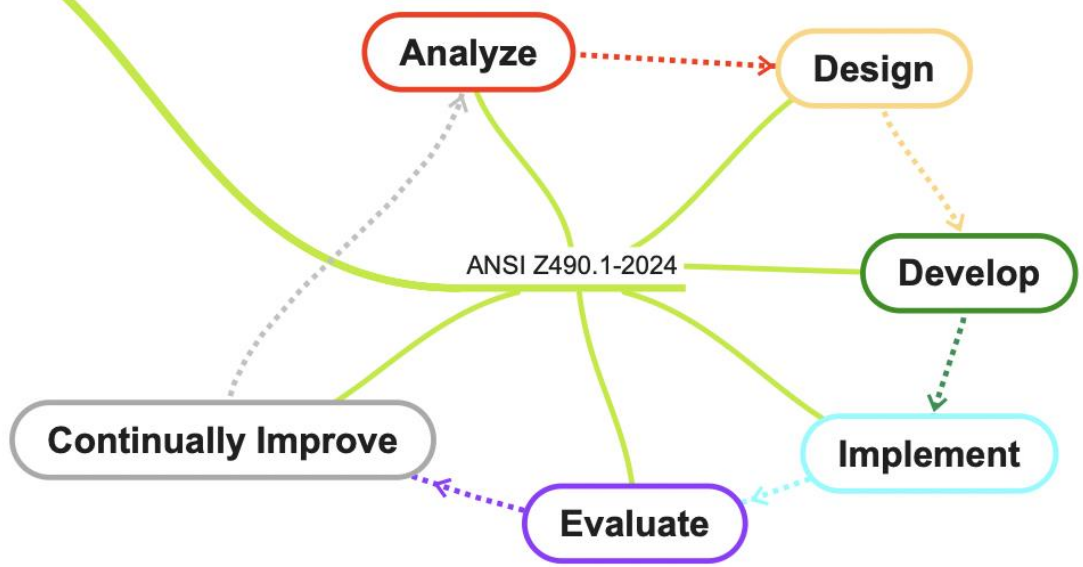
7.1 Resources

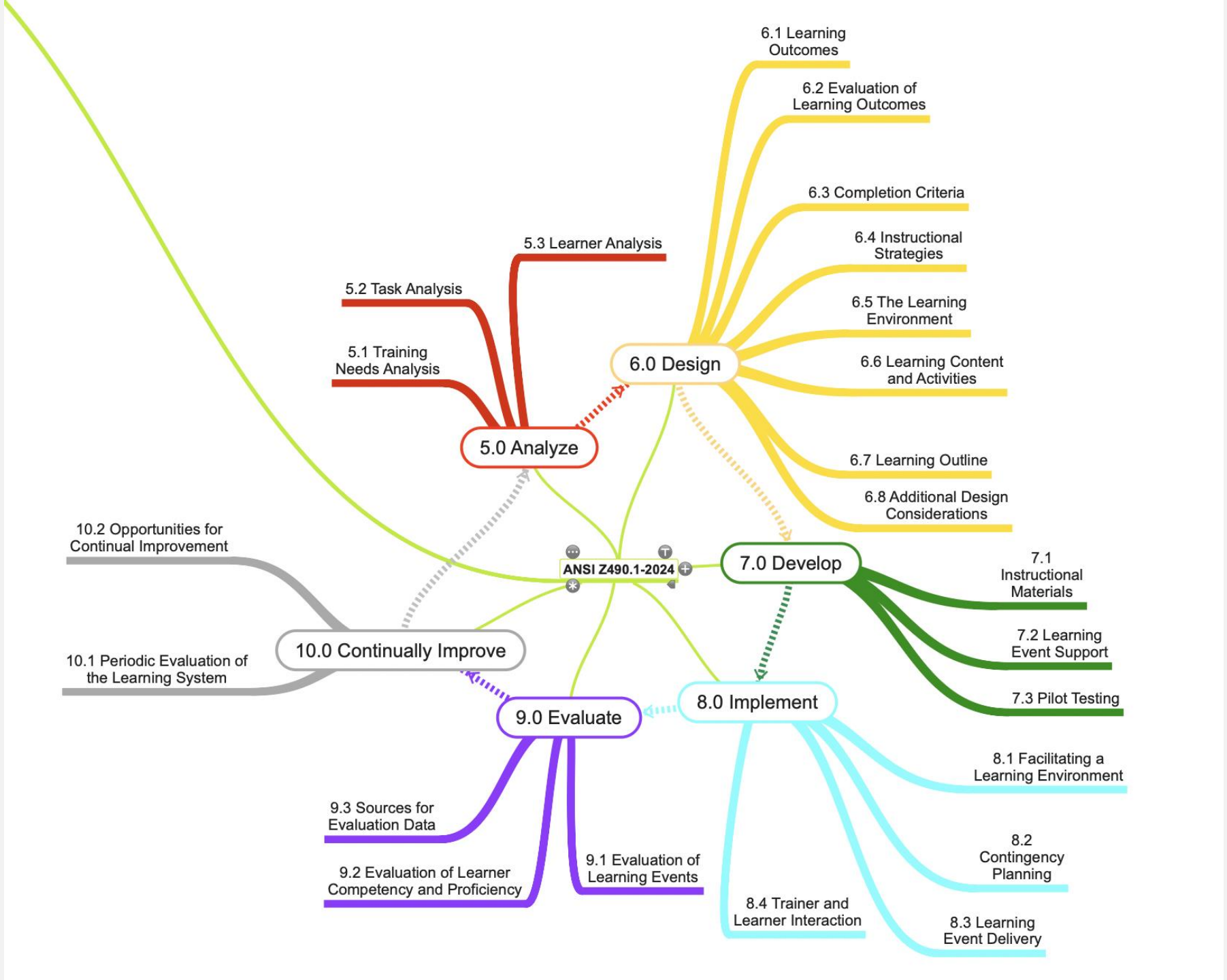
5 Documented Information

7.2 Competence

7.3 Awareness

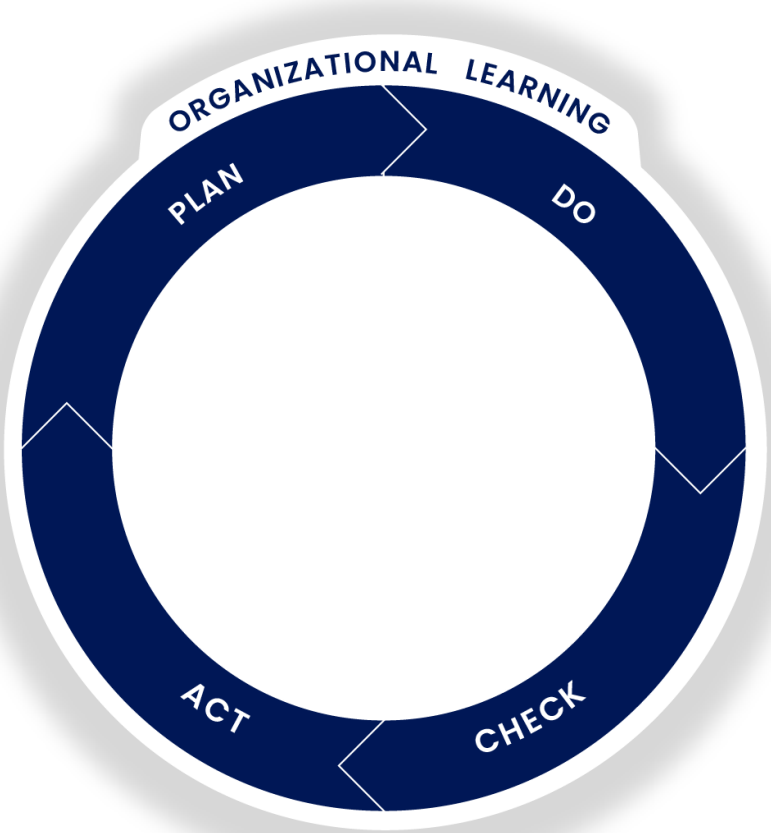
7.4 Communication

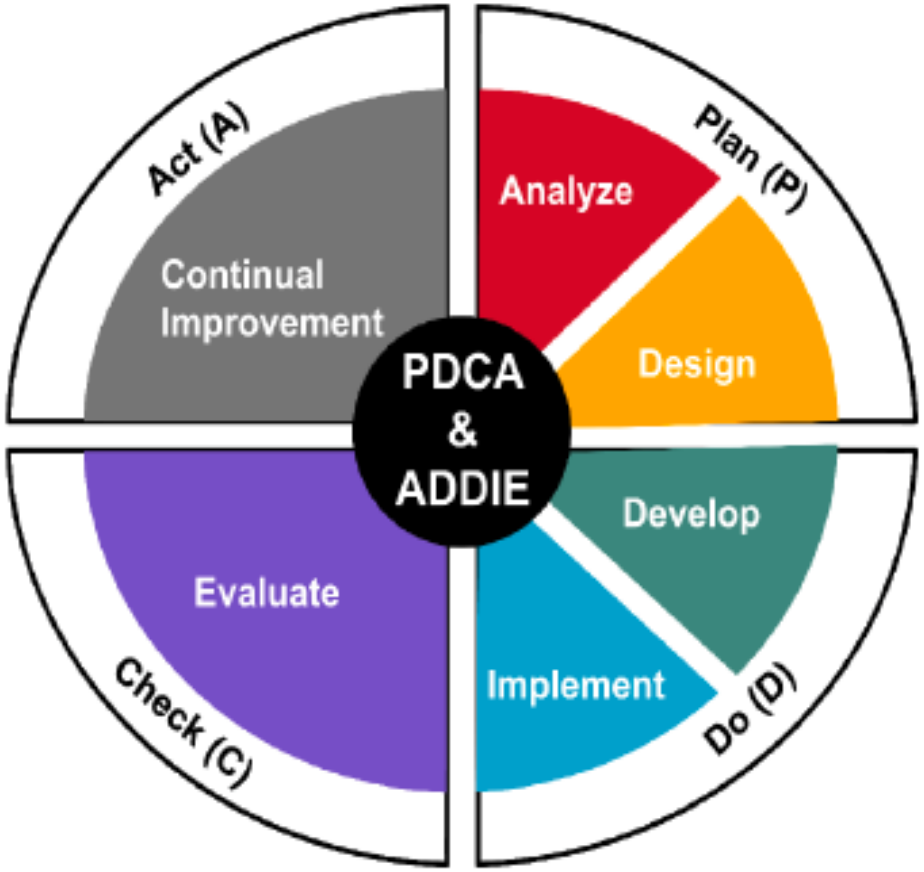



ANSI Z490.1-2024
5.0 Analyze
5.1 Training Needs Analysis
5.2 Task Analysis
5.3 Learner Analysis
6.0 Design
6.1 Learning Outcomes
6.2 Evaluation of Learning Outcomes
6.3 Completion Criteria
6.4 Instructional Strategies
6.5 The Learning Environment
6.6 Learning Content and Activities
6.7 Learning Outline
6.8 Additional Design Considerations
7.0 Develop
7.1 Instructional Materials
7.2 Learning Event Support
7.3 Pilot Testing
8.0 Implement
8.1 Facilitating a Learning Environment
8.2 Contingency Planning
8.3 Learning Event Delivery
8.4 Trainer and Learner Interaction
9.0 Evaluate
9.1 Evaluation of Learning Events
9.2 Evaluation of Learner Competency and Proficiency
9.3 Sources for Evaluation Data
10.0 Continually Improve
10.1 Periodic Evaluation of the Learning System
10.2 Opportunities for Continual Improvement

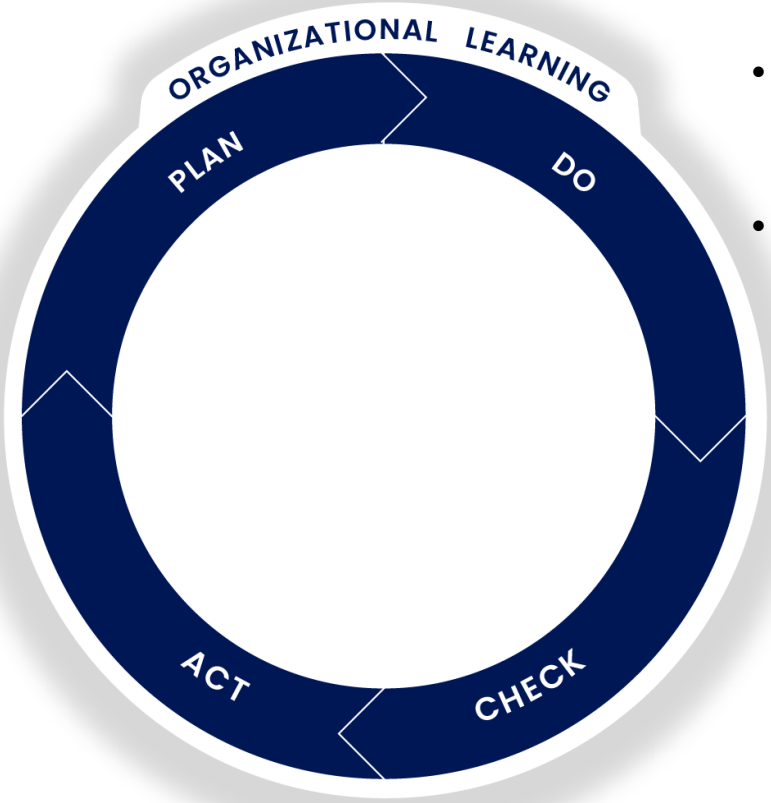
4.0 MANAGING SH&E LEARNING SYSTEMS

- **4.1 Learning Systems**
- **4.2 Training Personnel**
- **4.3 Training Documents**
- **4.4 Learner Management and Records**
- **4.5 Instructional Systems Design**


ORGANIZATIONAL LEARNING
PLAN
DO
CHECK
ACT

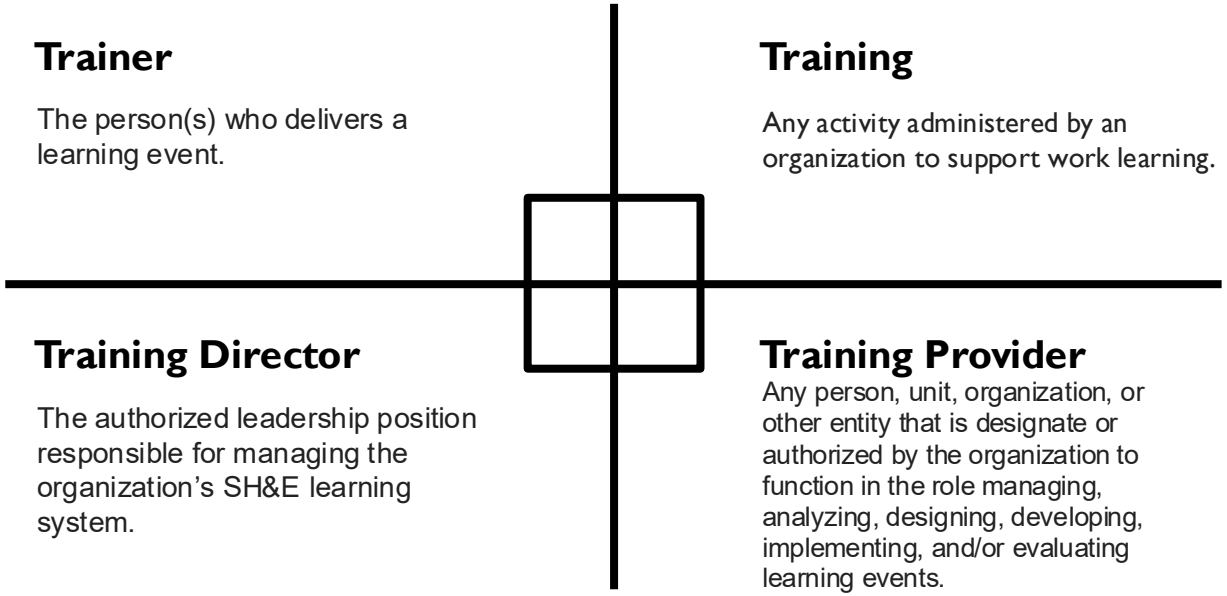

Act (A)
Continual Improvement
Plan (P)
Analyze
Design
PDCA & ADDIE
Develop
Implement
Do (D)
Check (C)
Evaluate

- Designate training directors and providers
- Prioritize needs based on activities and competency



- Establish systems and processes for administration, delivery, documentation
- Ensure proper qualifications of developers and trainers

- Maintain and update learning events
- Encourage learners to make recommendations



WHO IS AN SH&E "TRAINER"

DOCUMENTATION AND RECORDKEEPING

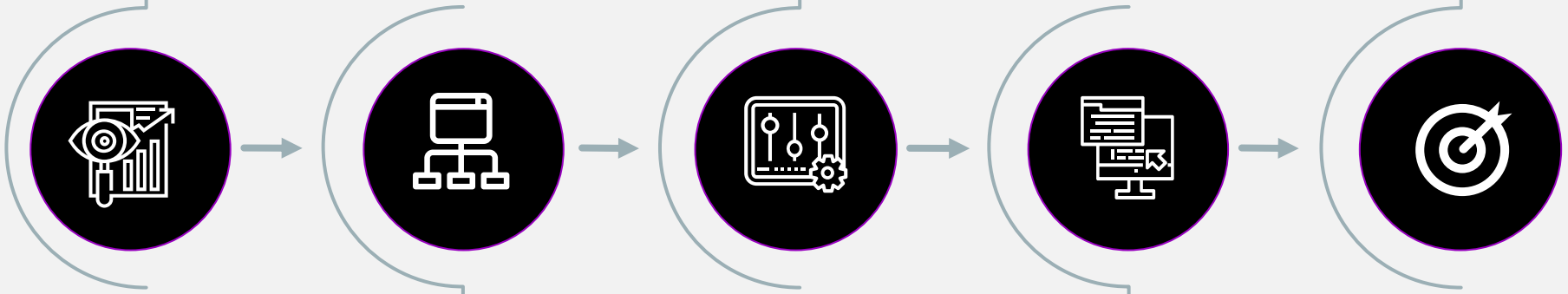


THE ADDIE MODEL

5.0 Analyze

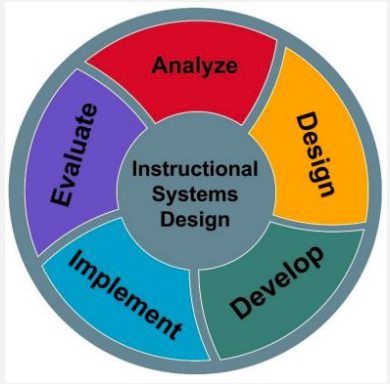
7.0 Develop

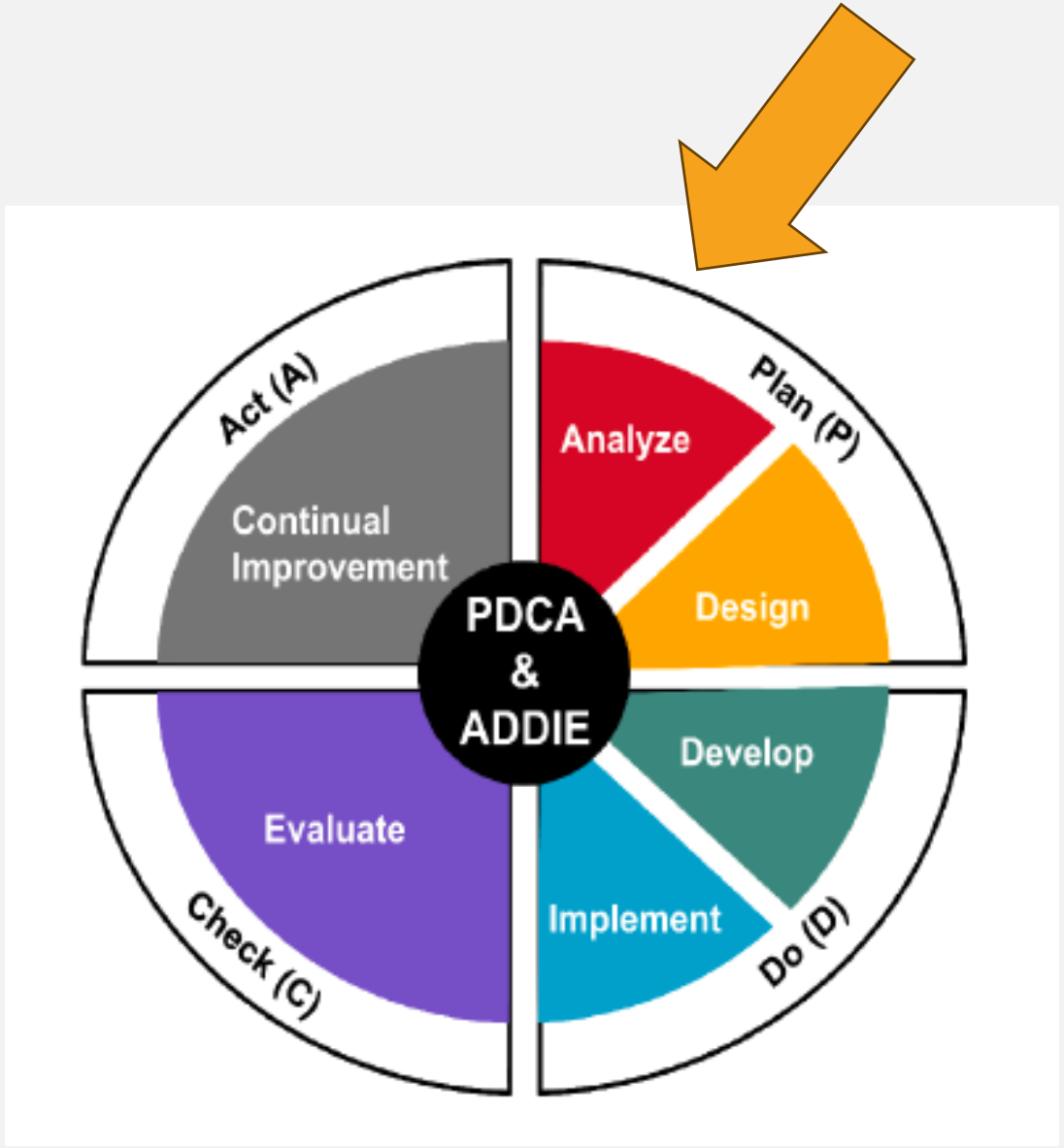
9.0 Evaluate



6.0 Design

8.0 Implement




Act (A)
Continual Improvement
Plan (P)
Analyze
Design
PDCA & ADDIE
Develop
Implement
Do (D)
Check (C)
Evaluate

PERFORMANCE GAP ANALYSIS

Cause of Problem	**Possible Solutions**
Motivational Issues	information, job aids, coaching, mentoring
Environmental Barriers	job redesign, new tools, technology
Flawed incentives/policies	new policies, management development, supervisory training
Absences of skills/knowledge	information, job aids, coaching, mentoring, TRAINING

5.1 TRAINING NEEDS ANALYSIS

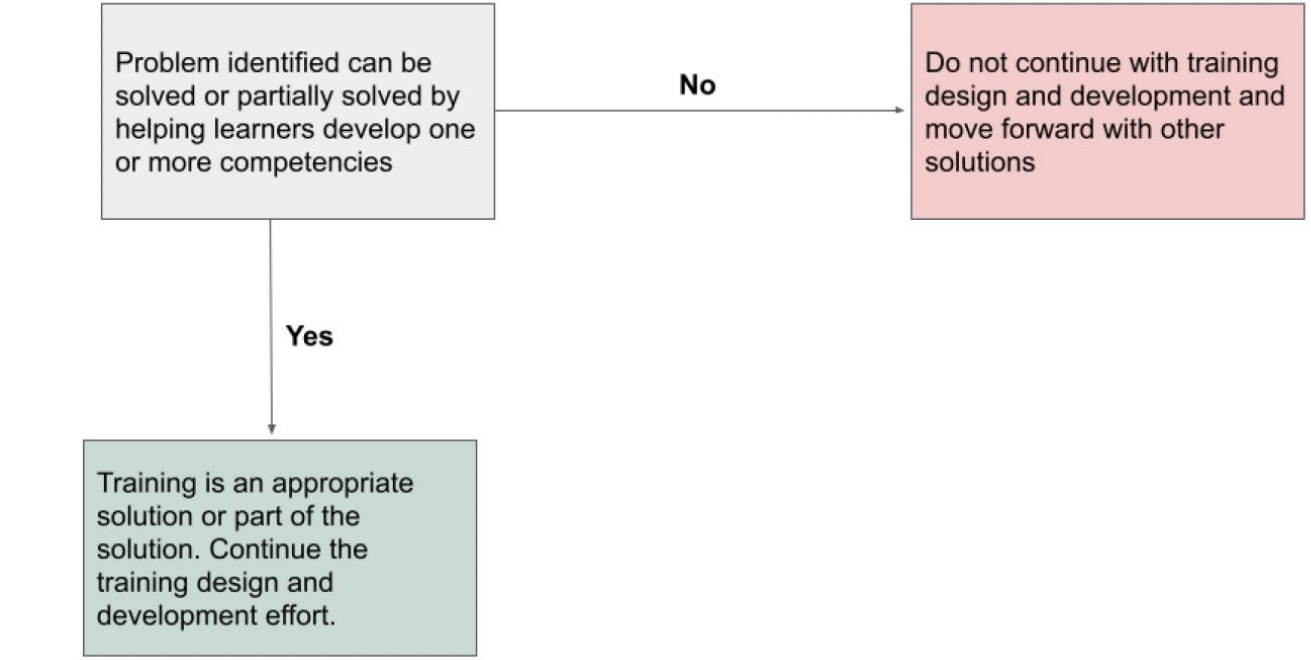
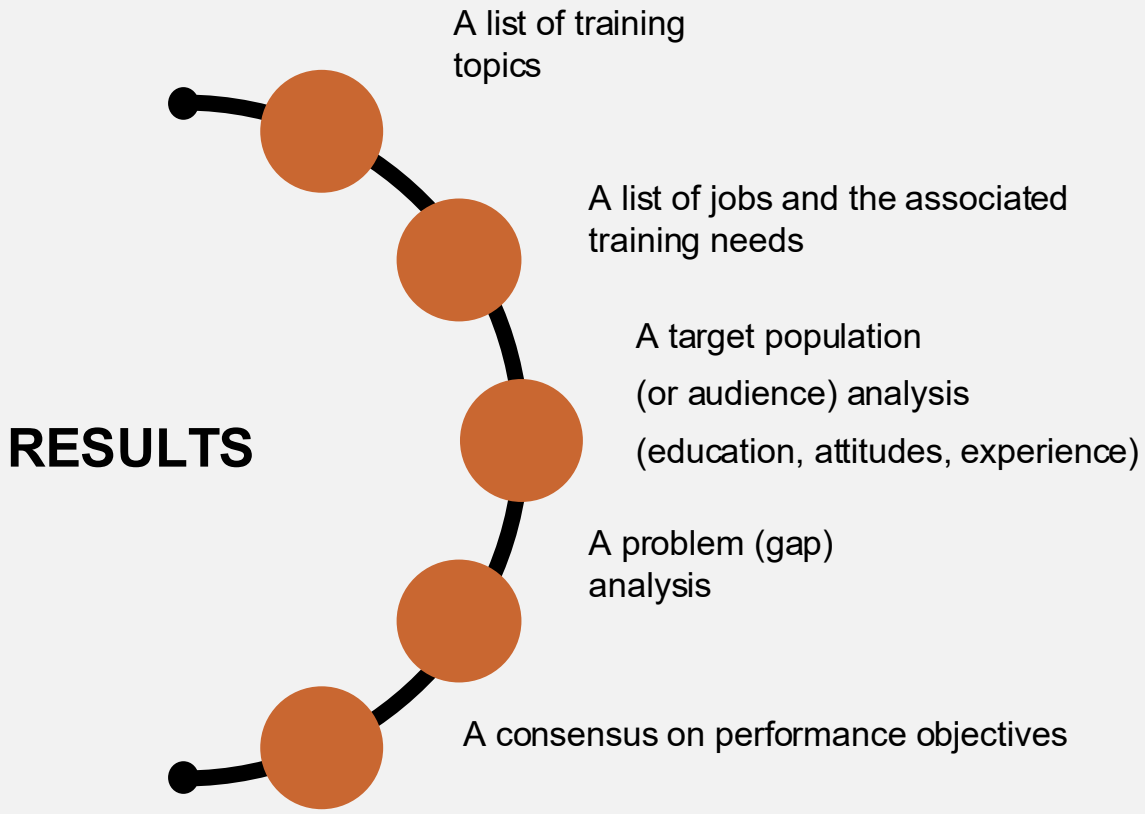


Figure 4, Decision to Train

5.1 TRAINING NEEDS ANALYSIS



5.2 TASK ANALYSIS

A task analysis is conducted on one or more job tasks relevant to the training needs and intended outcomes

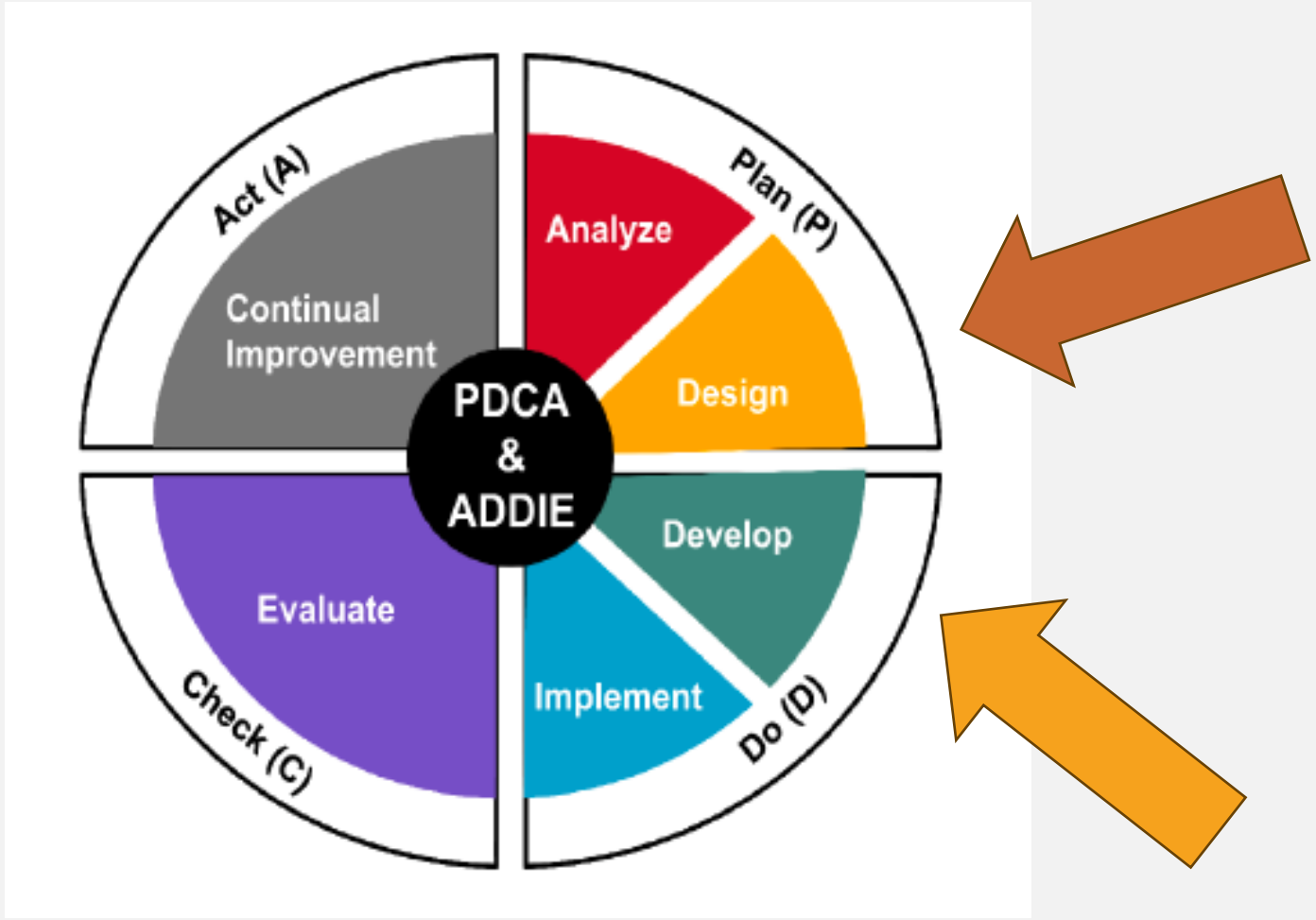
- Observed steps of safely performing the job in the desired sequence
- Non-observable decision-points that occur
- Risks that occur during completion of the task
- A description of the environment in which the learner will perform the task on the job and how the environment could affect work

5.3 LEARNER ANALYSIS

Learner Diversity

- Age
- Life experience
- Education
- Career stage
- Job roles
- Values & attitudes




Act (A)
Plan (P)
Analyze
Continual
Improvement
Design
PDCA
&
ADDIE
Develop
Evaluate
Implement
Check (C)
Do (D)

6.0 DESIGN VS. 7.0 DEVELOP

6.1 Learning Outcomes
6.2 Evaluation of Learning Outcomes
6.3 Completion Criteria
6.4 Instructional Strategies
6.5 The Learning Environment
6.6 Learning Content and Activities
6.7 Learning Outline
6.8 Additional Design Considerations

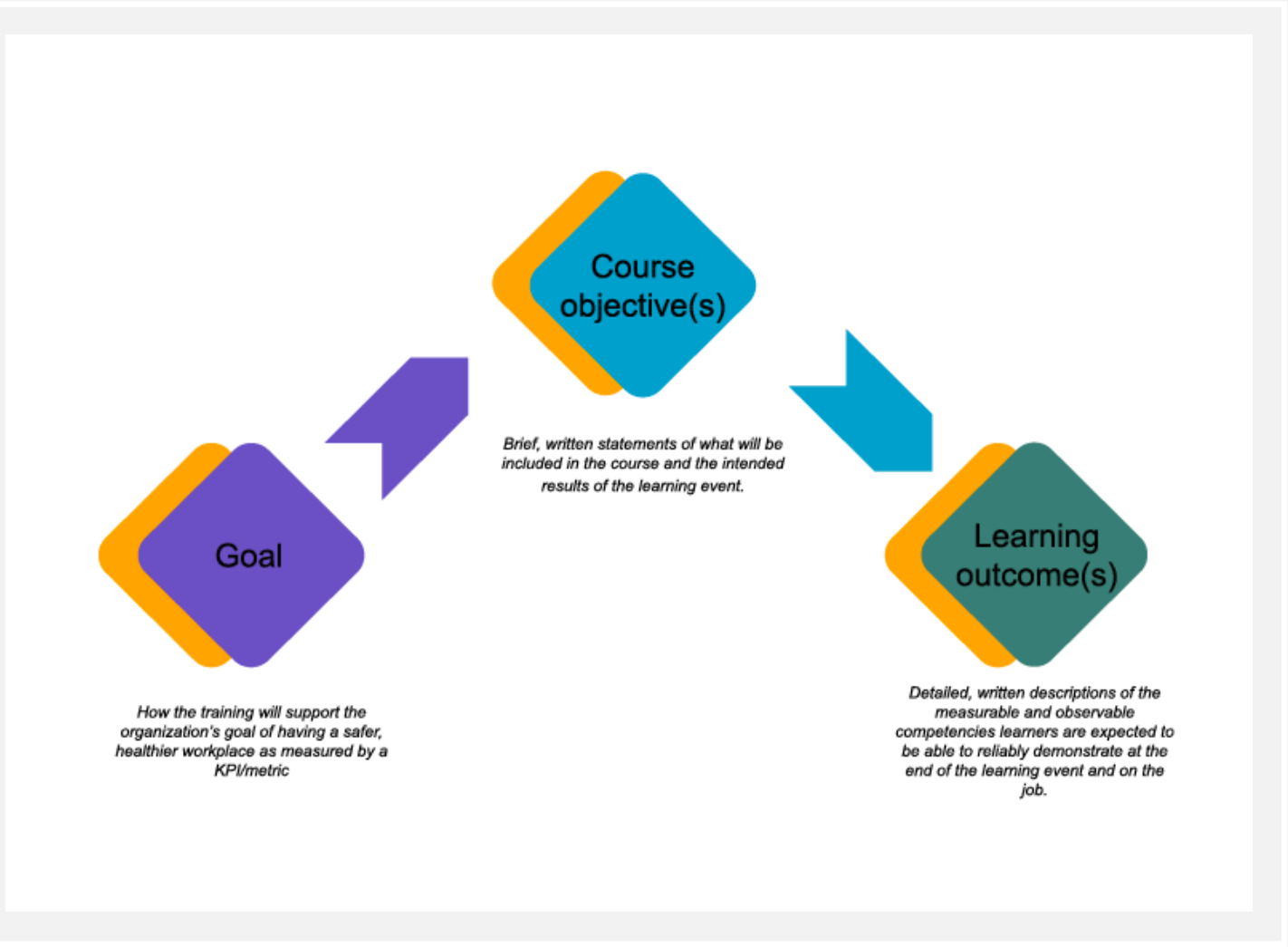
7.1 Instructional Materials
7.2 Learning Event Support
7.3 Pilot Testing

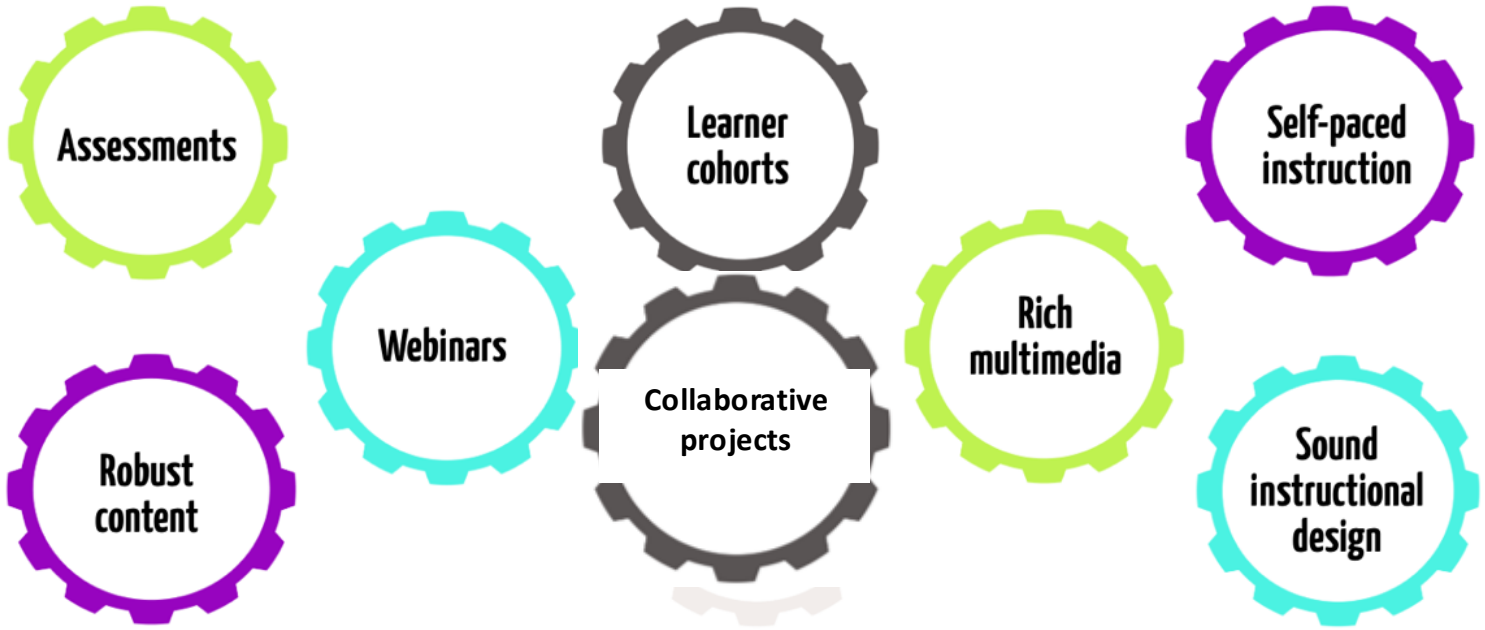
6.1 & 6.2 LEARNING OUTCOMES

- Indicators for how learning is relevant to the learn
- How the learner will benefit
- Why the learning may want to complete the training
- How the learning will be assessed
- Achieved Competencies of the learning event

  S-M-A-R-T

- Learning outcomes need to be assessed and evaluated to determine if they were achieved
  - Activities and evaluations should align to the learning outcomes





6.4 INSTRUCTIONAL STRATEGIES

7.1.1 TRAINER GUIDE

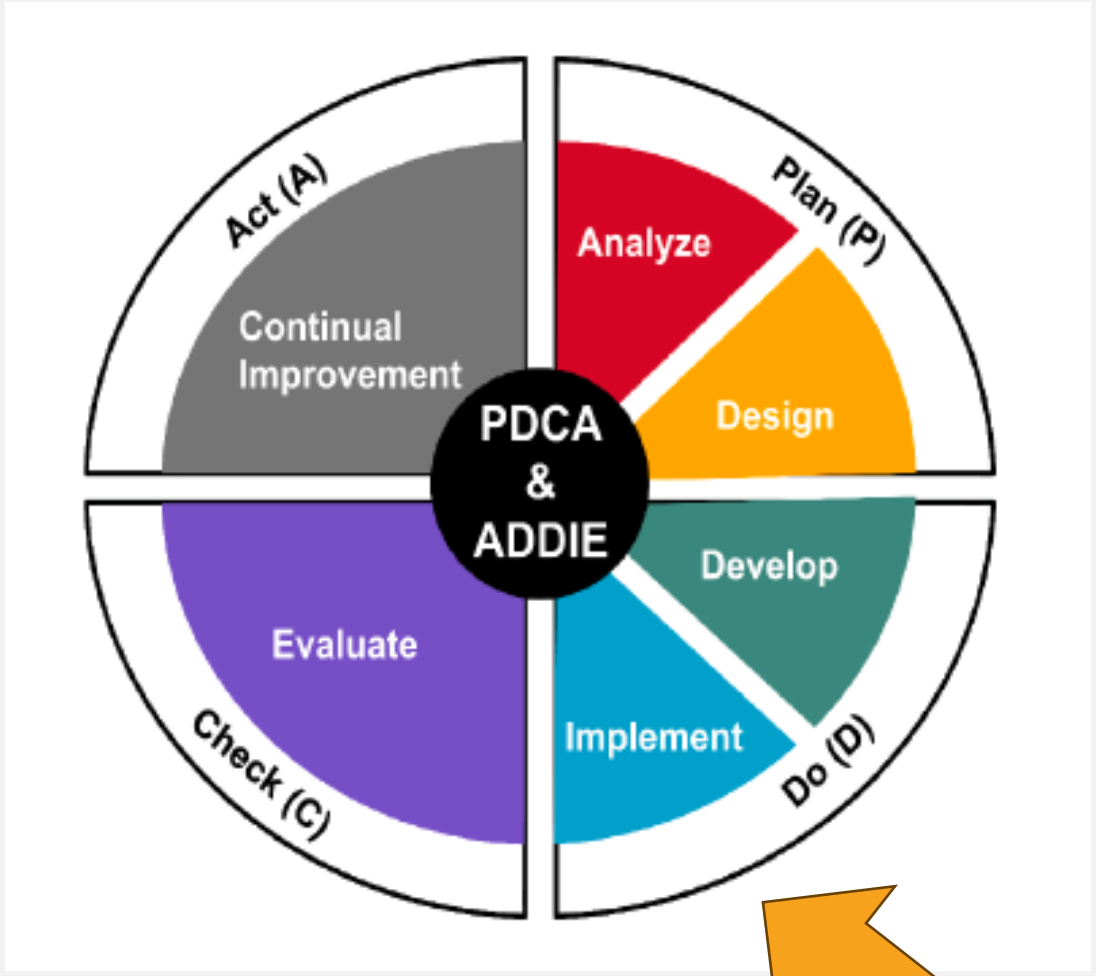
An outline of the learning outcomes, instructional strategies, media support, and evaluation techniques.

Helps a trainer to be organized

Assists with consistency of delivery

Provides documentation

A Blueprint for Instruction


Act (A)
Continual Improvement
Plan (P)
Analyze
Design
PDCA & ADDIE
Develop
Implement
Do (D)
Check (C)
Evaluate

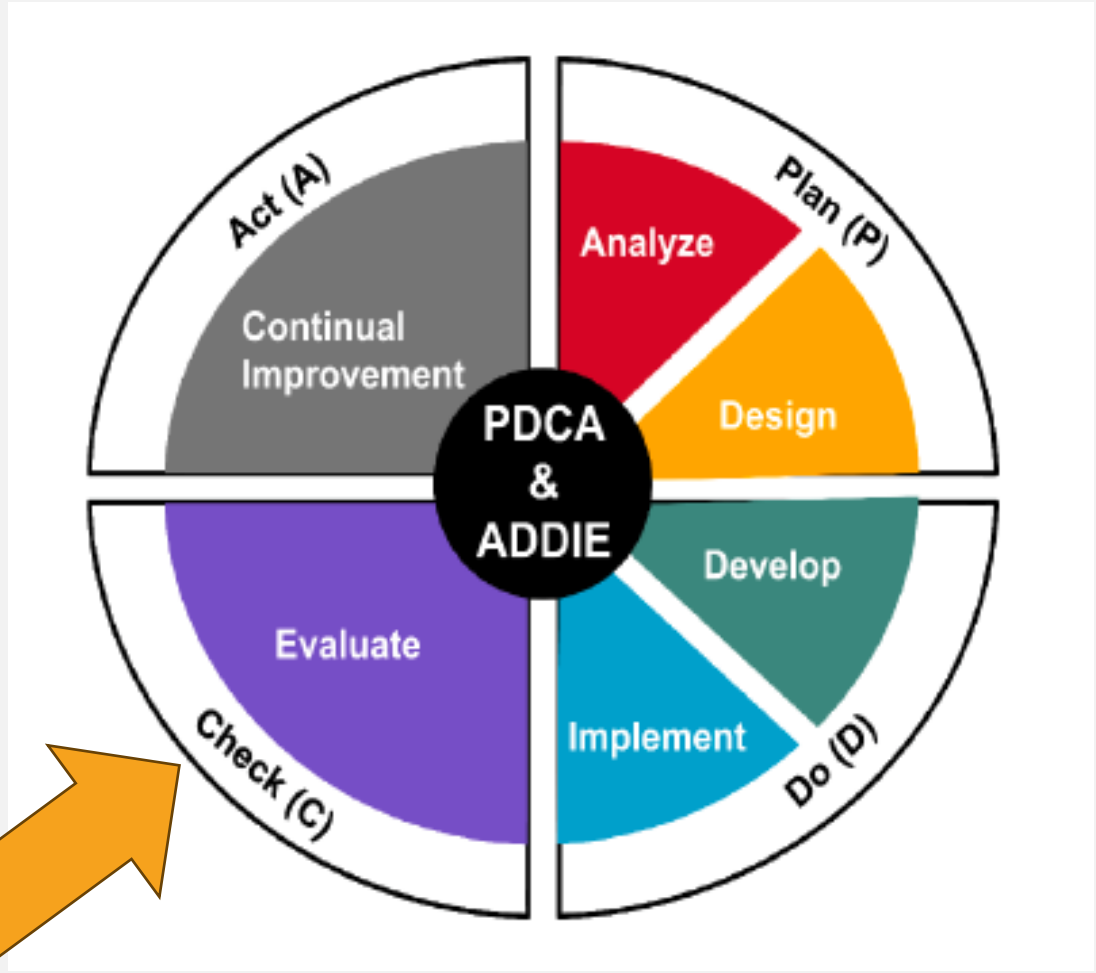
8.0 IMPLEMENT

8.1 Facilitating a Learning Environment

8.2 Contingency Planning

8.3 Learning Event Delivery

8.4 Trainer and Learner Interactions


Act (A)
Continual Improvement
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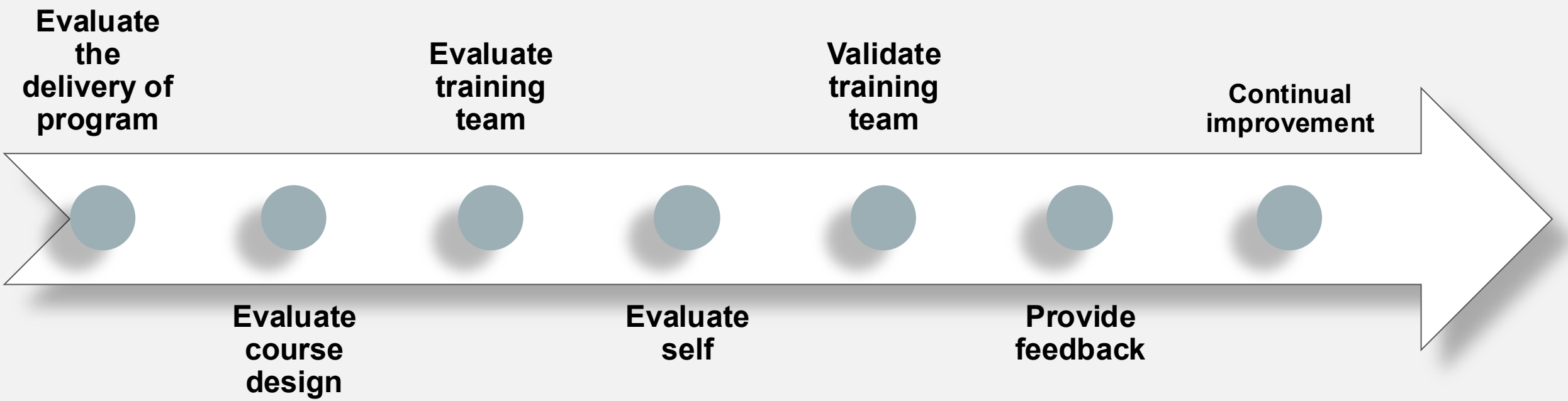
9.0 EVALUATE

9.1 Evaluation of Learning Events

9.2 Evaluation of Learner Competency and Proficiency

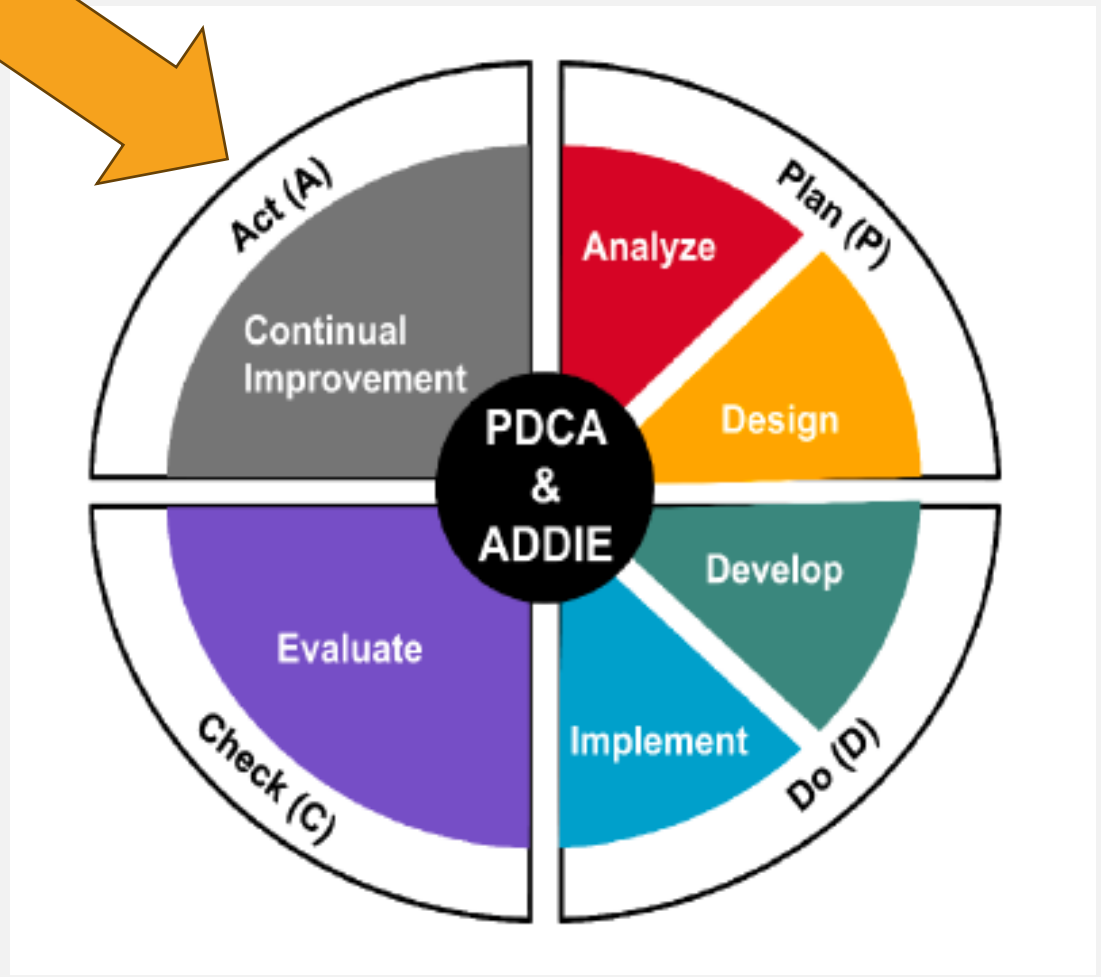
9.3 Sources for Evaluation data

9.1 EVALUATION OF LEARNING EVENTS



9.2 EVALUATION OF LEARNER COMPETENCY AND PROFICIENCY

- What methods and instruments (formative and summative) are available? (9.2)
- What metrics are available? (9.2)
- What evidence is available of learning achievement of outcomes? (9.2)
- Competency assessments shall be evaluated and documented (9.2.1)
- Learning outcomes define proficiency (9.2.1)
- Minimum levels of proficiency shall be specified in writing and communicated (9.2.2)
- Skills demonstration tasks and successful completion shall be documented (9.2.2)
- Consider Appendix A E9 Evaluate for Additional Evaluation Guidance


Act (A)
Continual Improvement
Plan (P)
Analyze
Design
PDCA & ADDIE
Develop
Implement
Do (D)
Check (C)
Evaluate

10.0 CONTINUAL IMPROVEMENT

10.1 Periodic Evaluation of Training Program Processes

10.2 Opportunities for Continual Improvement

ETHICS – E6.6. LEARNING CONTENT AND ACTIVITIES

- Ensuring appropriate (legal, copyright, professional ethical) access to ideas and media used within the training event
- Addressing macabre imagery and ensuring we are considering the ethical context of any macabre images or media.



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Safety Philosopher, Professional Speaker, Published Author, Lifelong Learner

Follow Up

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QUESTIONS?

