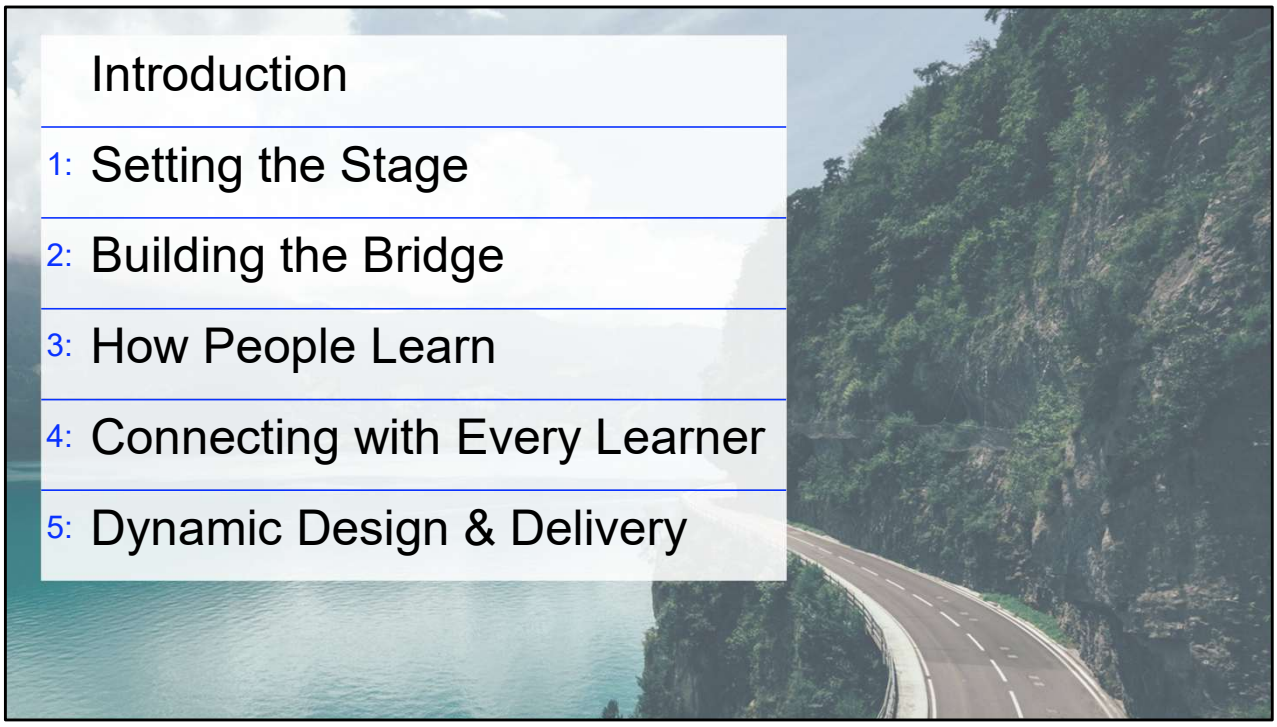
Teaching for Learning

Becki Rowan-White

Monday, April 20
8:00 – 12:00
Room 124



Explain that the workshop itself is designed using backward design — it starts with what we want participants to leave with, then builds backward to the experiences that will get them there. *I'm modeling the methodology I'm teaching you. Everything in this workshop is intentional.*

Walk through the day's schedule. Set expectations: this is a working session, not a lecture. They will leave with revised materials.

Workshop Learning Objectives

- **Apply** presentation design best practices to revise and enhance an existing slide deck, improving clarity, engagement, and instructional impact.
- **Analyze** the rationale behind effective instructional design and delivery techniques, enabling participants to make informed, purposeful choices when developing or refining presentations.
- **Convert** an existing presentation into a structured lesson plan using backward design principles, embedding formative and summative evaluation strategies at appropriate points to assess and support learner progress.
- **Evaluate** instructional materials for sources of extraneous cognitive load and apply evidence-based principles (chunking, signaling, coherence, modality) to reduce cognitive overload and promote germane processing.
- **Design** inclusive instructional experiences that incorporate accessibility best practices (Universal Design for Learning) and generational considerations to effectively engage diverse learners across the fire service workforce.

Introduction — brief bio, credibility, and personal connection to the topic.

Establish workshop norms:

phones on silent – step outside to conduct business

laptops for workshop use only during instruction (open during work sessions)

respectful dialogue

what's said here stays here

Housekeeping:

Restrooms

Breaks

Wi-Fi

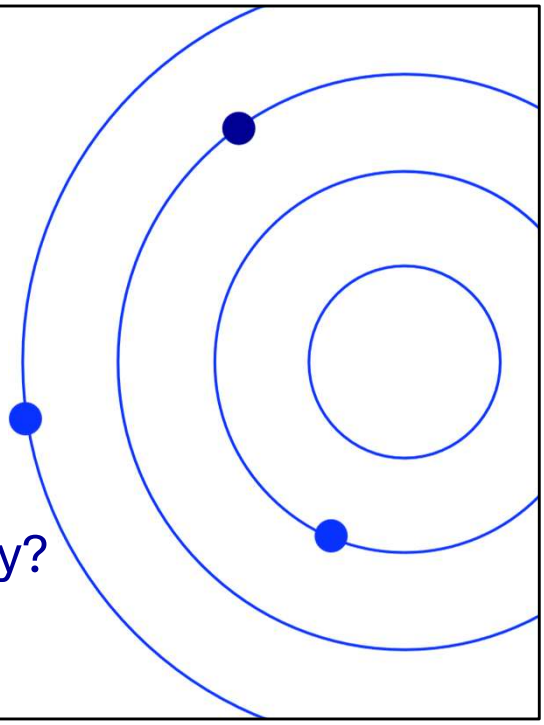
parking lot

Name

Department

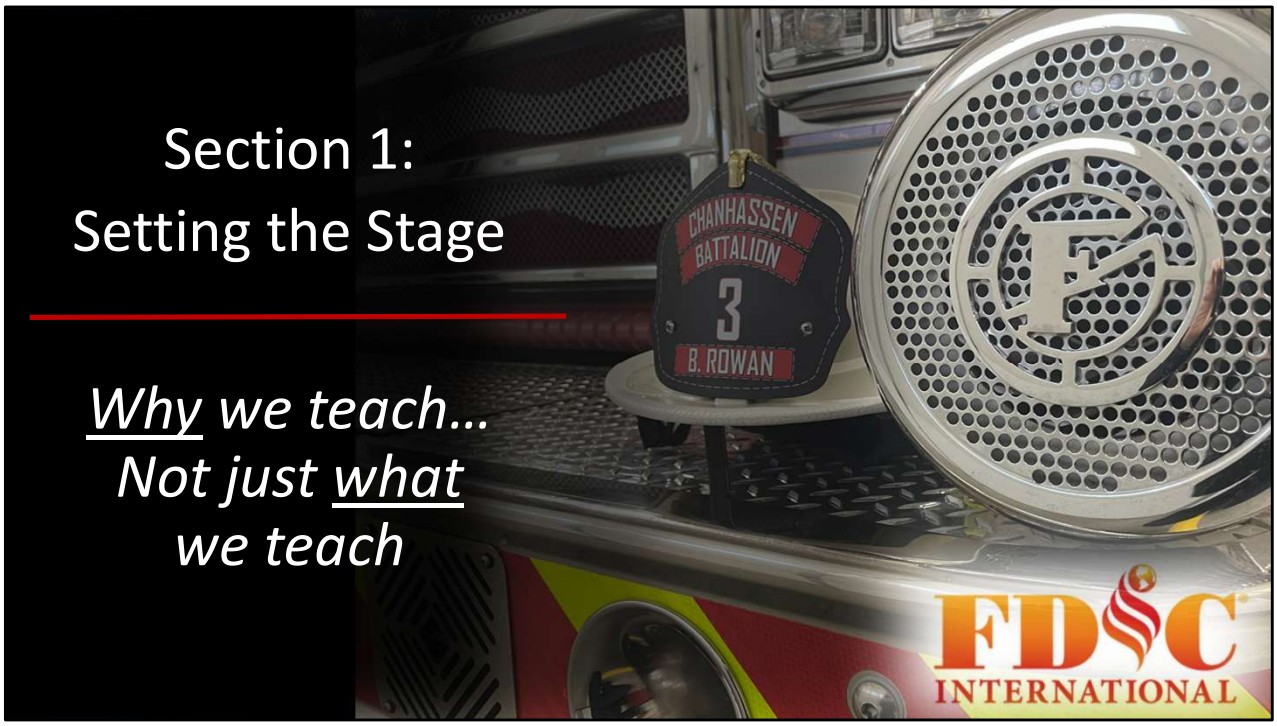
Interesting Fact
about you, your department, or anything you want

What do you hope to take away?



Quick table introductions:

name, department, years teaching / interesting fact, what they hope to take away

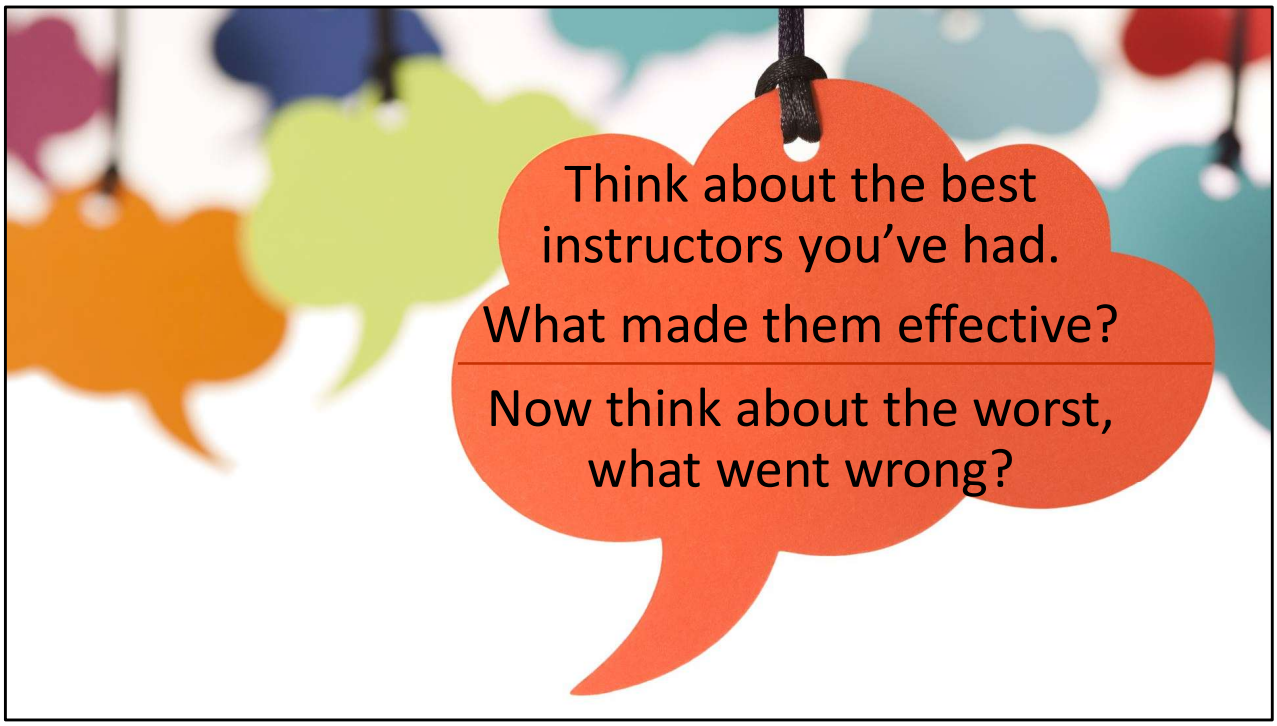


Module 1 Learning Objectives

- Distinguish between presenting information and facilitating learning, articulating why the difference matters for fire service outcomes.
- Identify personal strengths and growth areas in instructional practice through self-assessment.
- Describe how backward design informs the structure of effective instruction.

Methodology Integration — Module 1

- **Backward Design:** Modeled transparently — facilitator explains the workshop's own backward design
- **Transformative Learning:** The disorienting dilemma opens the transformative arc
- **Storytelling:** Fire service analogy ("We wouldn't go to a fire without a plan") anchors the shift



Capture themes on flip chart or digital board. +|- list

This is the transformative learning entry point.

"Think about the best instructor you've ever had. What made them effective? Now think about the worst. What went wrong?"

Pair-share (3 min), then whole-group harvest (5 min).

Common response: Participants often list "passion" and "stories" as top traits of great instructors. Validate these, then pivot: "Passion is necessary but not sufficient. What else do they bring? What else is included"

The Pivot — Where the "Dilemma" Hits

- Here's the key move: most participants will list **delivery traits** — energy, passion, storytelling, humor, subject knowledge. Very few will mention slide design, lesson planning, learning theory, or evaluation strategies.
- That's when you deliver the pivot line:
- *"Notice how few of us mentioned slide design, lesson planning, or learning theory? That's our gap. We're going to close it today."*

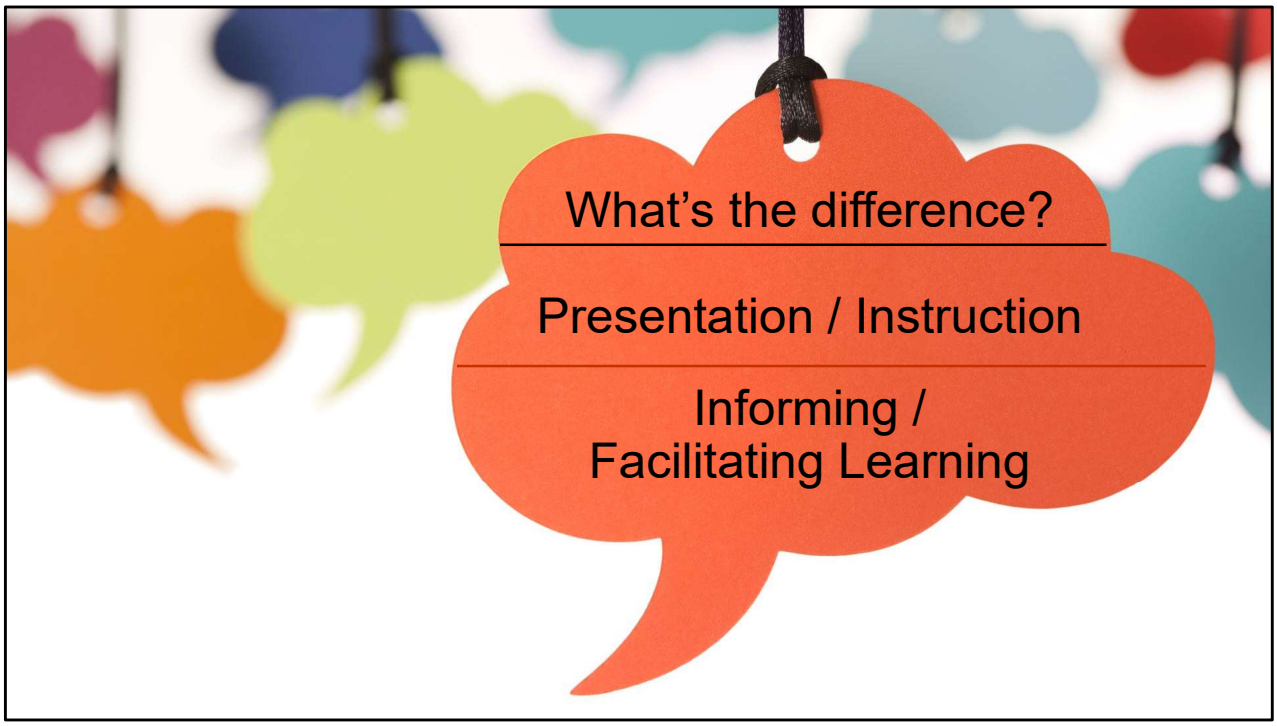
Why It Works as a Disorienting Dilemma

- In Mezirow's Transformative Learning framework, a disorienting dilemma is a moment that doesn't fit what the learner thought they knew. These experienced instructors walk in believing they understand what makes great instruction — and they do, partially. But when they see their own collective answers captured on that flip chart, they realize their mental model of "good instructor" is built almost entirely around performance traits and is missing the design and science of learning. That gap between what they believe and what the evidence shows is the dilemma.
- It's designed to be safe but unsettling — not an attack on their competence, but an honest reveal of a blind spot. The facilitator notes even include coaching language for participants who get defensive: *"You're already good — we're going from good to intentional."*

Transformative Learning in the Fire Service article reference:

After the flip-chart reveal (where participants realize their "great instructor" answers skew toward performance traits), explain:

- *"This moment you just experienced — that gap between what you thought you knew and what the evidence shows — Mezirow calls this a disorienting dilemma. I wrote about how this same dynamic plays out across the fire service every day..."*
- Briefly reference the article's argument that the fire service is collectively experiencing a disorienting dilemma through operational and generational shifts — making the workshop's opening feel connected to a much larger professional transformation, not just a classroom exercise.



Brief facilitated discussion.

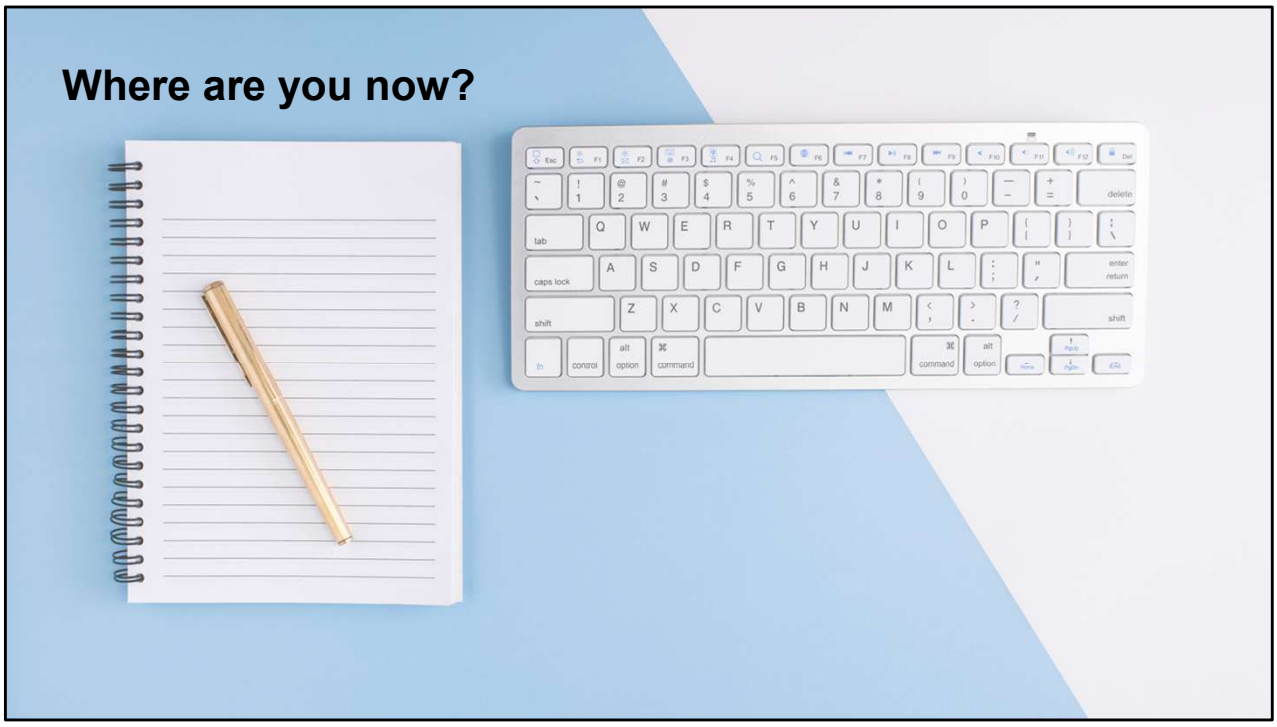
- What's the difference between a presentation and instruction?
- Between informing and facilitating learning?

Key concepts:

- A presentation delivers content; instruction designs an experience where learners construct knowledge.
- Every presentation IS a learning opportunity — and instructors have a responsibility to design it that way.

Fire service analogy: *"We wouldn't go to a fire without a plan. Why do we go to the classroom without one?"*

Introduce the concept that the rest of the day will give them the tools to plan deliberately.



Participants complete the **Instructor Self-Assessment handout** (Handout 2).

- Rate current comfort (1–5) with: instructional design, lesson planning, engagement strategies, visual design, accessibility, evaluation, delivery, technology integration.
- Identify their top 3 priorities for today.

This becomes their personal baseline and revision guide. *This is YOUR roadmap for today.*

Watch for: Participants who are defensive about their current approach. Normalize: "You're already good — we're going from good to intentional."

Activity: Backward-Map Their Existing Presentation Purpose

- Create the *disorienting dilemma* that drives transformative learning.

Outcome

- Participants realize their current presentations are content-heavy and outcome-(and evaluation) light—setting up the need for the rest of the workshop.

Facilitator Notes

Ask probing questions:

- "What assumptions about your learners show up in your slides?"
- "What parts of your presentation reflect tradition rather than intentional design?"
- "Where might your slides unintentionally reinforce hierarchy or passive learning?"
- This is where participants begin to see their own frames of reference in action.

Process

- Participants take their existing presentation.
- They answer three backward-design questions:
  - **What should learners *be able to do* after this session?**
  - **How will you know they can do it?**
  - **What learning experiences will get them there?**
- They compare this to their current slide deck.

Integrated Theory

- **Backward Design:** Stage 1–2–3
- **Transformative Learning:**
  - Disorienting dilemma
  - Critical reflection

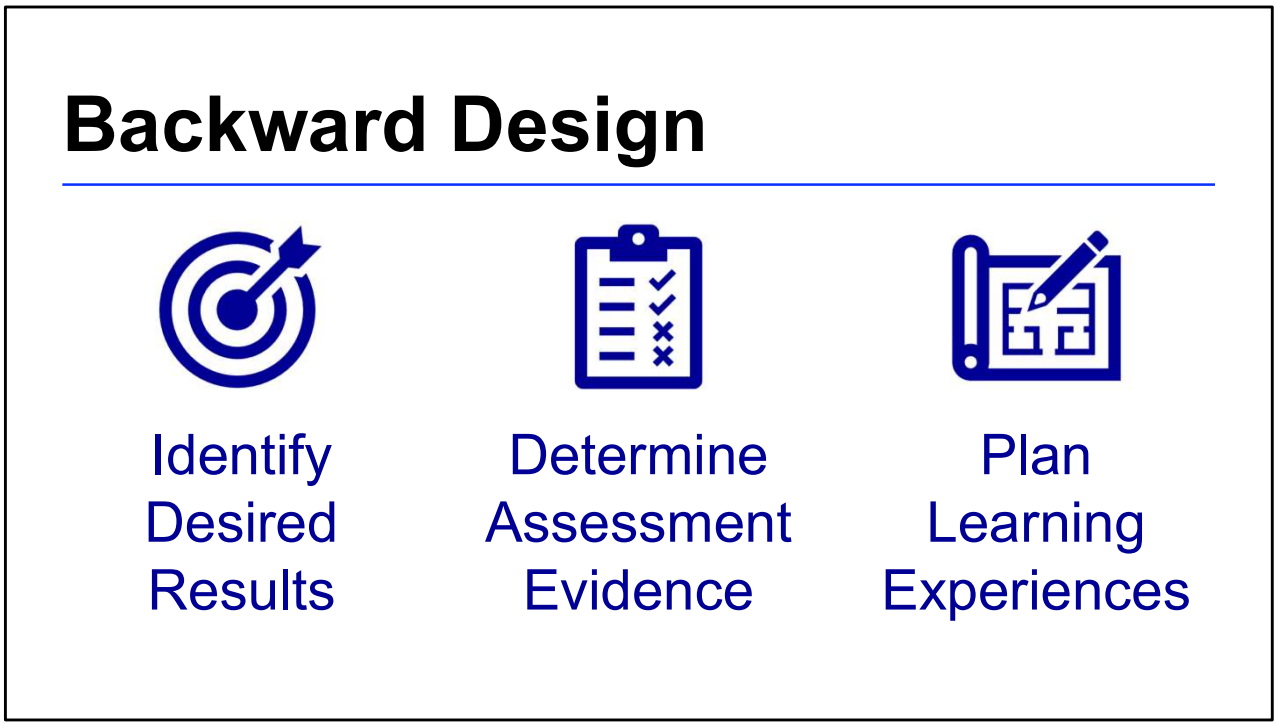
Transition to Module 2: *"Now that we've identified the gap between presenting and teaching, let's build the bridge. Module 2 is about turning your presentations into lesson plans."*

Module 2 Learning Objectives

- Apply the three stages of backward design to convert an existing presentation section into a structured lesson plan.
- Implement the 5E instructional model as a lesson planning framework for fire service instruction.
- Embed formative and summative evaluation strategies at appropriate points within a lesson plan.

Methodology Integration — Module 2

- **Backward Design:** Primary framework — taught and applied
- **Experiential Learning:** Hands-on application (Work Session #1 = Active Experimentation)
- **Evaluation Strategies:** Formative and summative tools embedded



Backward Design (Wiggins & McTighe)

Walk through Wiggins & McTighe's 3 stages with a fire service example (e.g., teaching fire behavior):

- **Stage 1 — Desired Results:** What should learners know or be able to do? (Identify the three components of the fire triangle and explain how each contributes to fire behavior.)
- **Stage 2 — Acceptable Evidence:** How will you know they learned it? (Scenario-based assessment: given a fire scenario, learner identifies contributing factors.)
- **Stage 3 — Learning Experiences:** What activities get them there? (Interactive demonstration, small-group case study, teach-back.)

Key insight: *Most instructors start with Stage 3 (I'll make some slides) and never address Stages 1–2. Backward design reverses this.*

Background:

- **Backward Design** reverses the traditional planning process. Instead of starting with

activities or content, instructors begin with three stages: (1) identify desired results, (2) determine acceptable evidence that learners have achieved those results, and (3) plan learning experiences and activities.

Application:

– This is the foundational framework for Modules 1–2. The workshop itself is designed using backward design (modeled transparently), and participants apply it to convert their presentations into structured lesson plans with embedded evaluation.

Desired results → evidence → learning plan

– Share a short, high-impact example of a fire-service presentation redesigned using backward design.
– Connect to adult learning principles: relevance, experience, problem-orientation.

Backward Design Alignment

– Clarify the workshop's desired results (learning objectives).
– Participants identify personal goals for improving their presentation (goal-orientation).

Backward Design: Workshop Overview

Purpose

– This overview introduces backward design as a foundational instructional planning framework for the workshop. It helps instructors shift from content-driven teaching to performance-driven learning by starting with the end in mind. Backward design aligns seamlessly with adult learning theory, transformative learning, and the 7E instructional model.

What Is Backward Design?

– Backward design is a planning process that begins with identifying the desired learning outcomes and then works backward to develop assessments and learning experiences. Rather than asking, "What content should I cover?", backward design asks, "What should learners be able to *do*?"
– This approach ensures that instruction is purposeful, aligned, and focused on performance rather than information delivery.

The Three Stages of Backward Design

- **1. Identify Desired Results**
  - Determine what learners should know, understand, and be able to do by the end of instruction.
    In the workshop: Participants articulate performance-based outcomes for their own lessons.
- **2. Determine Acceptable Evidence**
  - Identify how learners will demonstrate mastery of the outcomes.
    In the workshop: Participants examine whether their current assessments truly measure performance.
- **3. Plan Learning Experiences and Instruction**
  - Design activities, strategies, and resources that support learners in achieving the outcomes.
    In the workshop: Participants redesign lessons using the 7E model, adult learning principles, and effective instructional methods.

Application to This Workshop

- Backward design is the backbone of the workshop's structure and activities.
  - **Teaching Identity Snapshot**
    - Surfaces assumptions about teaching and reveals whether participants currently design with outcomes or content in mind.
  - **Backward-Mapping Activity**
    - Participants compare their existing presentations to backward design principles, creating a productive gap between current and desired practice.
  - **Video Analysis (Action Mapping)**
    - Demonstrates backward design in action through a workplace-relevant model.
  - **7E Model Integration**
    - Provides a structured way to plan learning experiences that align with outcomes.
  - **Lesson Redesign**
    - Participants apply backward design to create aligned outcomes, assessments, and learning activities.

Integration with Other Frameworks

- **Adult Learning Theory:** Ensures relevance and problem-centered learning.
- **Transformative Learning:** Creates the disorienting dilemma that drives perspective change.

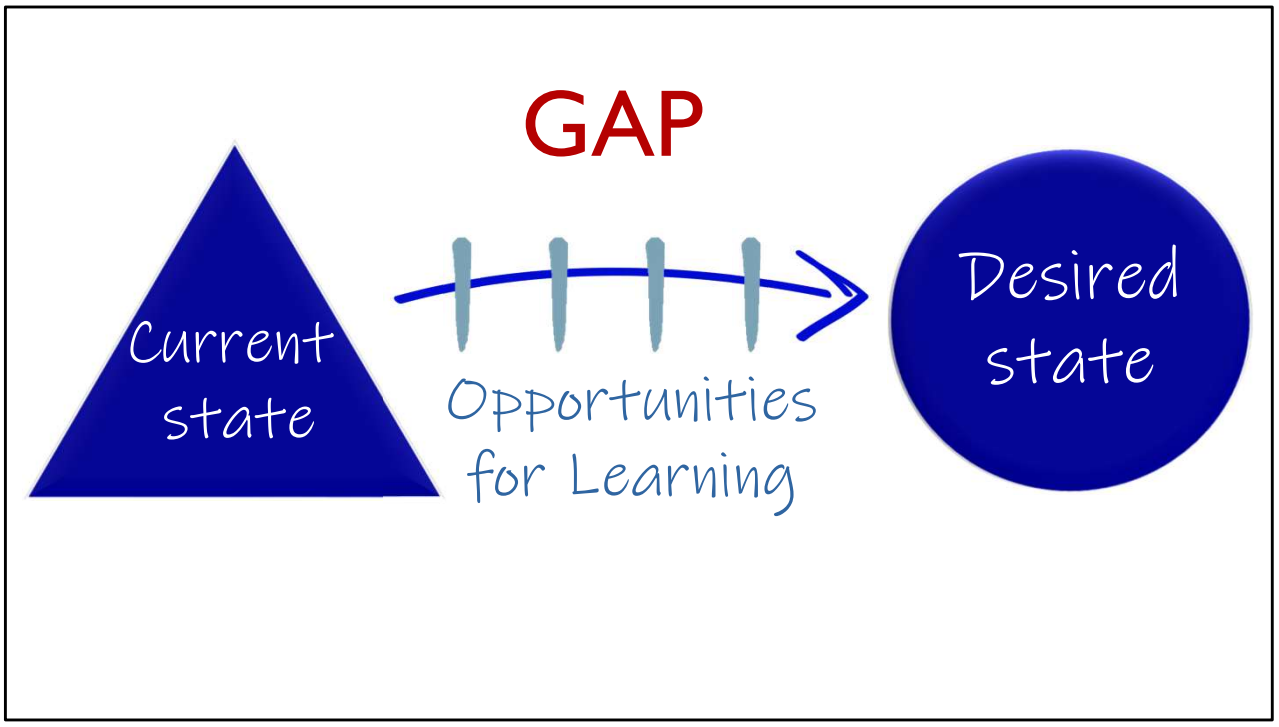
- **Maslow's Hierarchy:** Supports readiness and psychological safety for deeper learning.
- **Thorndike's Laws:** Reinforces readiness, practice, and satisfaction through aligned instruction.
- **Bloom's Domains:** Guides outcome creation across cognitive, psychomotor, and affective domains.
- **7E Model:** Provides the structure for planning learning experiences.

Key Takeaways

- Backward design ensures instruction is purposeful and aligned.
- Outcomes drive assessment and instruction—not the other way around.
- Performance-based outcomes lead to deeper learning and operational readiness.
- This workshop uses backward design to model the very practices it teaches.

Reflection Prompt

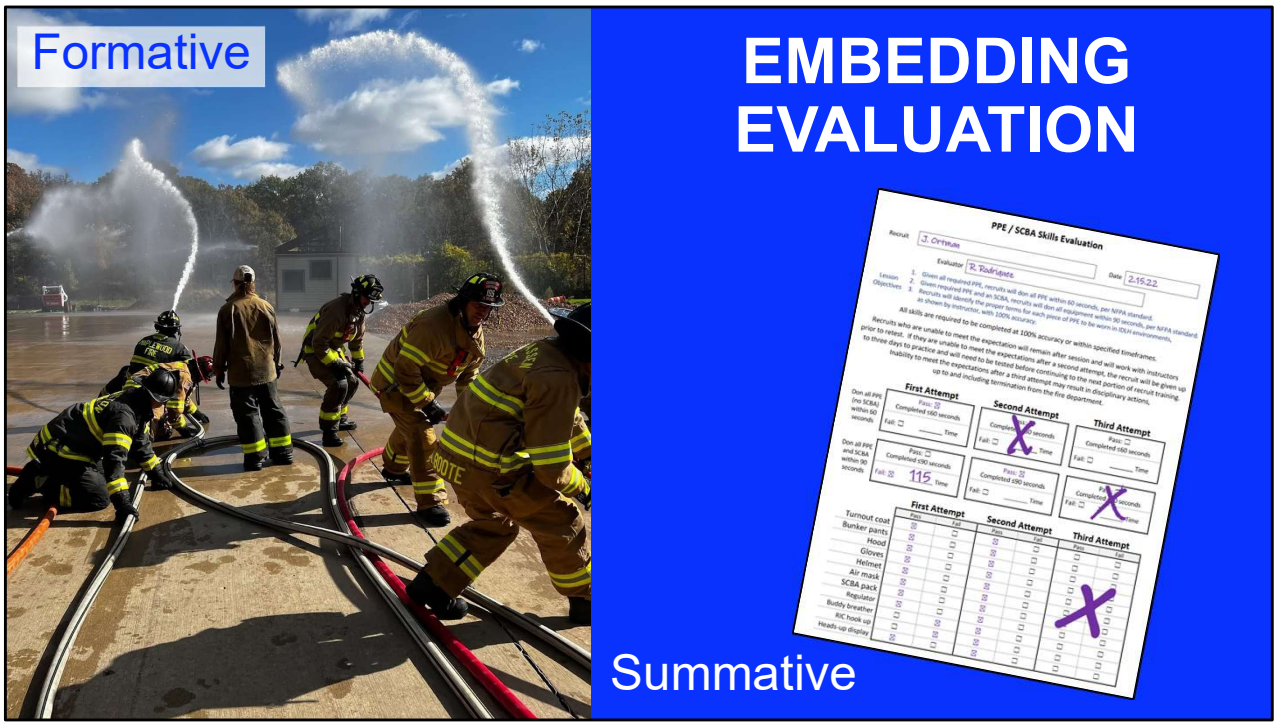
- *How does starting with outcomes change the way you think about designing instruction, and what shifts might you make in your own teaching as a result?*



Once you determine the objectives, determine why learners aren't currently meeting those objectives – these are the gaps. (knowledge, skills, motivation/attitude, habit, environment, communication). This could go either way objectives / gaps or gaps/objectives.

- What do they need to learn?

- Think of it like a gap analysis – If learning is a journey, what is the gap between where they are and where they need to be? Sometimes that gap is knowledge, but just as often the gap can be skills, motivation, habit, or environment.



Embedding Evaluation Strategies

- **Formative evaluation** (during instruction): exit tickets, polling questions, think-pair-share, one-minute papers, teach-back, thumbs up/down.
- **Summative evaluation** (after instruction): scenario-based assessment, skills demonstration, portfolio review, written test. Key concept: evaluation is not just the last step — it's woven throughout. *"Checking for understanding is not the same as testing for grades.*

Formative evaluation helps YOU adjust instruction in real time."

Discuss how to write objectives and how those objectives need to be clearly tied to the evaluation.

Examples of an evaluation plan

Watch for: Participants who struggle to articulate learning objectives separate from content topics. Coach: "Don't tell me what you'll cover — tell me what learners will be able to DO."

- **The Components of Learning Objectives**
  - Many different methods may be used for writing learning objectives.
    - ABCD method: Audience, Behavior, Condition, Degree
    - Learning objectives do not need to be written in that order.
  - **Audience**
    - Describes the students
    - It is acceptable to reference the audience once at the beginning of the objectives list as long as all of the objectives relate to the same audience.
    - If the objective is written correctly, the audience demographics will be evident in the structure of the objective.
  - **Behavior**
    - Must a be an observable and measurable action
      - State, describe, identify
    - The behavior may identify the type of presentation or class that will be conducted.
      - Describe, state = knowledge (cognitive objective)
      - Demonstrate, perform = action (psychomotor objective)
    - Instructors should blend presentation styles to enhance the learning environment whenever possible.

    - Appealing to multiple senses and allowing for many application opportunities enhances learning.
- **Condition**
    - Describes the situation in which the student will perform the behavior
    - Includes the following:
        - Specific equipment or resource
        - Personal protection equipment (PPE) or safety items
        - Physical location or circumstances
- **Degree**
    - Indicates how well the student is expected to perform the behavior in the listed conditions
    - Total mastery of a skill would require 100 percent completion (perfection).
        - Psychomotor objectives often require 100 percent completion.
        - Cognitive objectives are expected to be learned to the degree of passing a written exam (70 percent or 80 percent).
    - Time limit is also frequently used.

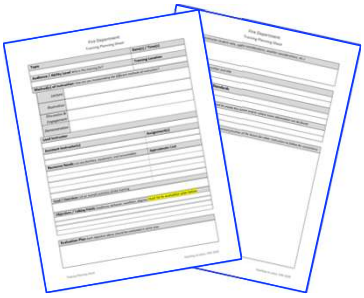
Using the ABCD Method

- Well-written learning objectives should contain all four elements of the ABCD method.
- Nevertheless, learning objectives are often shortened because one or more of the elements are assumed to be known.
    - Audience or condition may have previously been stated.
    - Further, many learning objectives are written with the understanding that the degree will be determined by testing.
    - Learning objectives should be shortened in this way only when the assumptions for the missing components are clearly stated elsewhere in the lesson plan.
    - Unlikely to omit behavior component
    - Some curricula do require the ABCD to be stated each time, in sequence, and in complete form.
- Not all parts need to be in ABCD order.
- Inclusion of all four of its elements is essential in the construction of the terminal objective, which is the main idea for the lesson.
- Subsequent (enabling) objectives may assume certain points previously stated in the main objective.


Evaluation Plan
CHANHASSEN FIRE
TRUCK 1
1200
900
600
300
11 °F

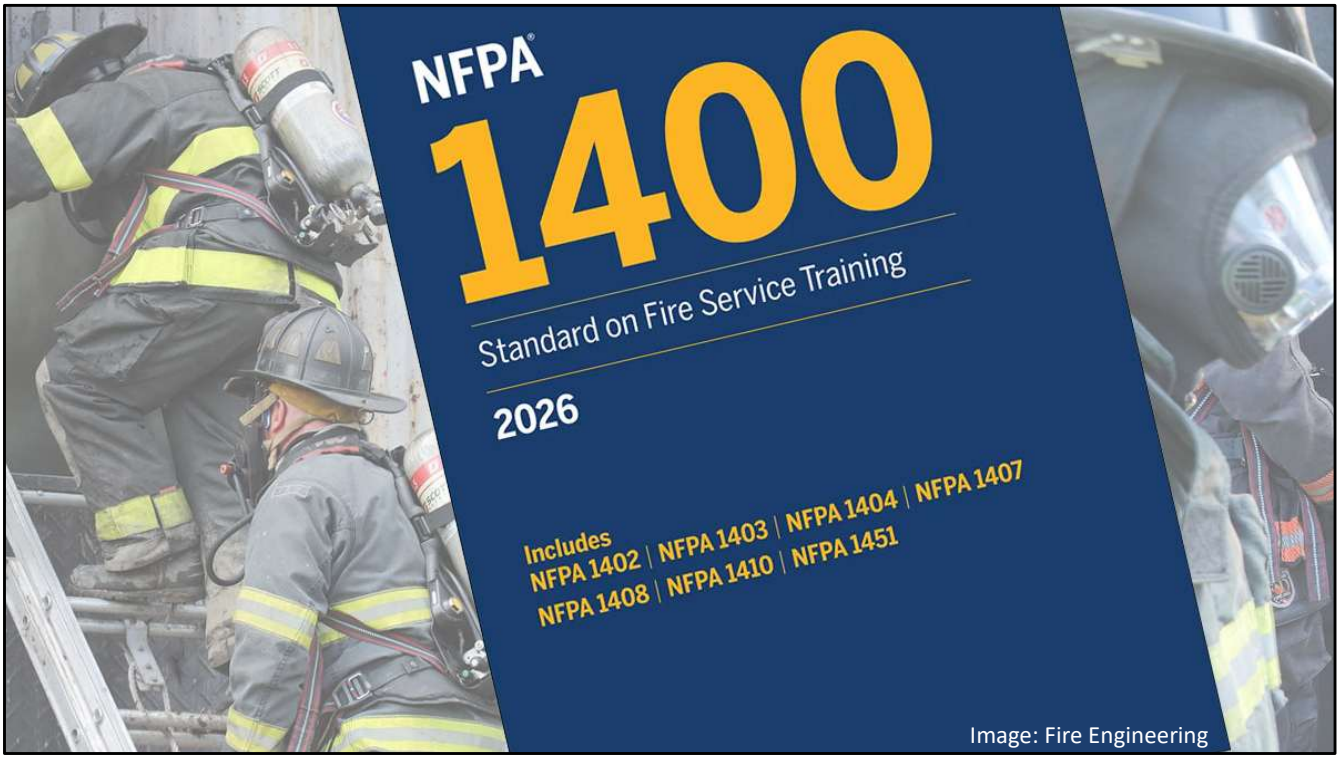
Lesson Plan Elements

Topic
Audience / Ability Level - Pre-requisite Skills
Method(s) of Instruction
Instructors Needed
Resources Needed
Goal / Overview / Key Takeaways



Learning Objectives
Evaluation Plan - Aligned with Learning Objectives
Safety Plan
References / SOG-Ps / Standards
Clear, Detailed Lesson Outline

UL Research Institutes



(All information from Fire Engineering article:

- **The Single Source for Fire Service Training Guidance: The New NFPA 1400**
  https://www.fireengineering.com/firefighter-training/the-single-source-for-fire-service-training-guidance-the-new-nfpa-1400/?utm_source=facebook&utm_medium=social&utm_campaign=editorial&utm_content=fire_engineering&fbclid=IwY2xjawP_BoZleHRuA2FlbQIxMQBicmlkETJBM09Ec0c5b1hwUGtPQ1VZc3J0YwZhcHBfaWQQMjIyMDM5MTc4ODIwMDg5MgABHsSaq6vEdyS-BH0uPPYk2G0Q1Q2ZbbUiglIsZ-BvskVwFNaSqlvnflGTP5Ur_aem_Y-0jXb8QrpQxLOqU7d4FBg

- *NFPA 1400, Standard on Fire Service Training* has taken seven separate standards and combined them into one comprehensive training standard. Instead of seven documents, the new NFPA 1400 takes all the listed previous standards below and made them into individual chapters of the new standard, providing end users with a single standard to address all training needs. The previous standalone standards were:
  - **NFPA 1402, *Standard on Facilities for Fire Training and Associated Props***
  - **NFPA 1403, *Standard on Live Fire Training***
  - **NFPA 1404, *Standard for Fire Service Respiratory Protection Training***
  - **NFPA 1407, *Standard for Training Fire Service Rapid Intervention Crews***
  - **NFPA 1408, *Standard for Training Fire Service Personnel in the Operation, Care, Use and Maintenance of Thermal Imagers***
  - **NFPA 1410, *Standard on Training for Emergency Scene Operations***
  - **NFPA 1451, *Standard for a Fire and Emergency Service Vehicle Operations Training Programs***

Participants open their own presentation on their device. Using the **Lesson Plan Template**, they begin converting ONE section of their presentation into a structured lesson plan.

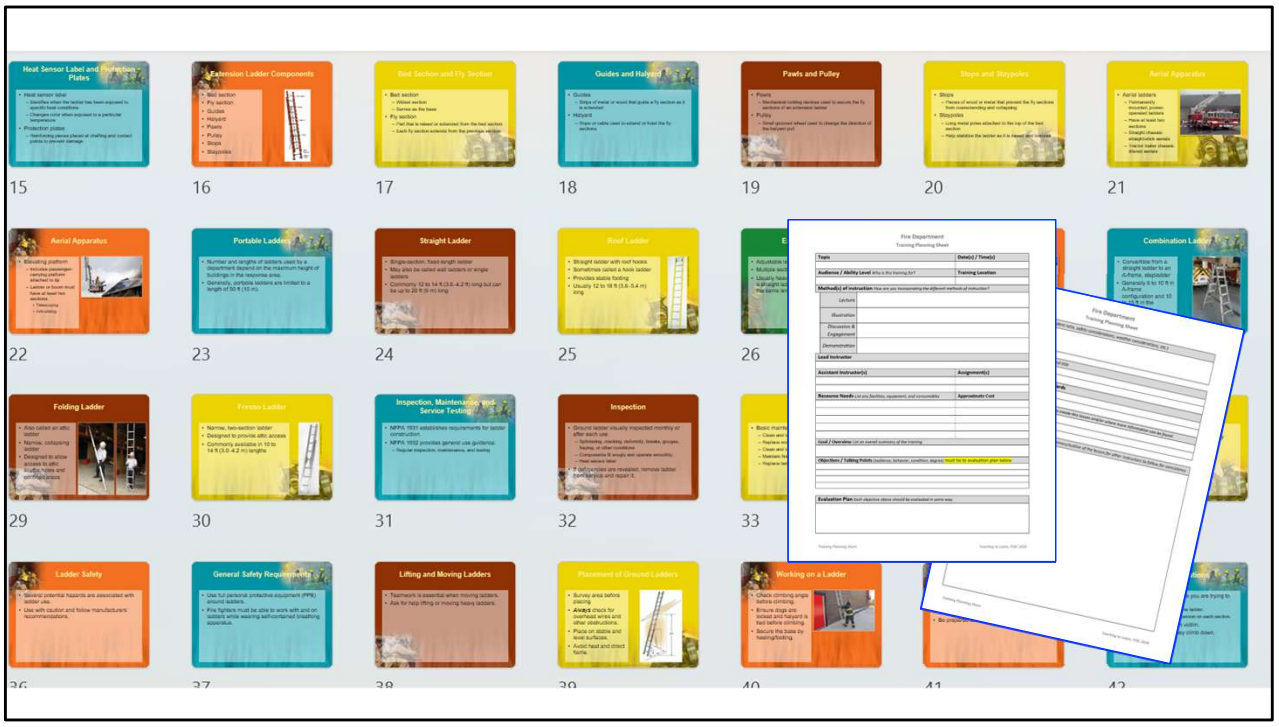
Guiding questions:

- What is the desired outcome?
- What engagement hook will you use?
- Where is the learner exploration?
- How will you check for understanding?

Facilitator circulates, coaches, answers questions.

Encourage table partners to share and give initial feedback.

Work session coaching: Focus on participants who have never written a lesson plan. Help them identify Stage 1 (desired results) first — everything else flows from there.



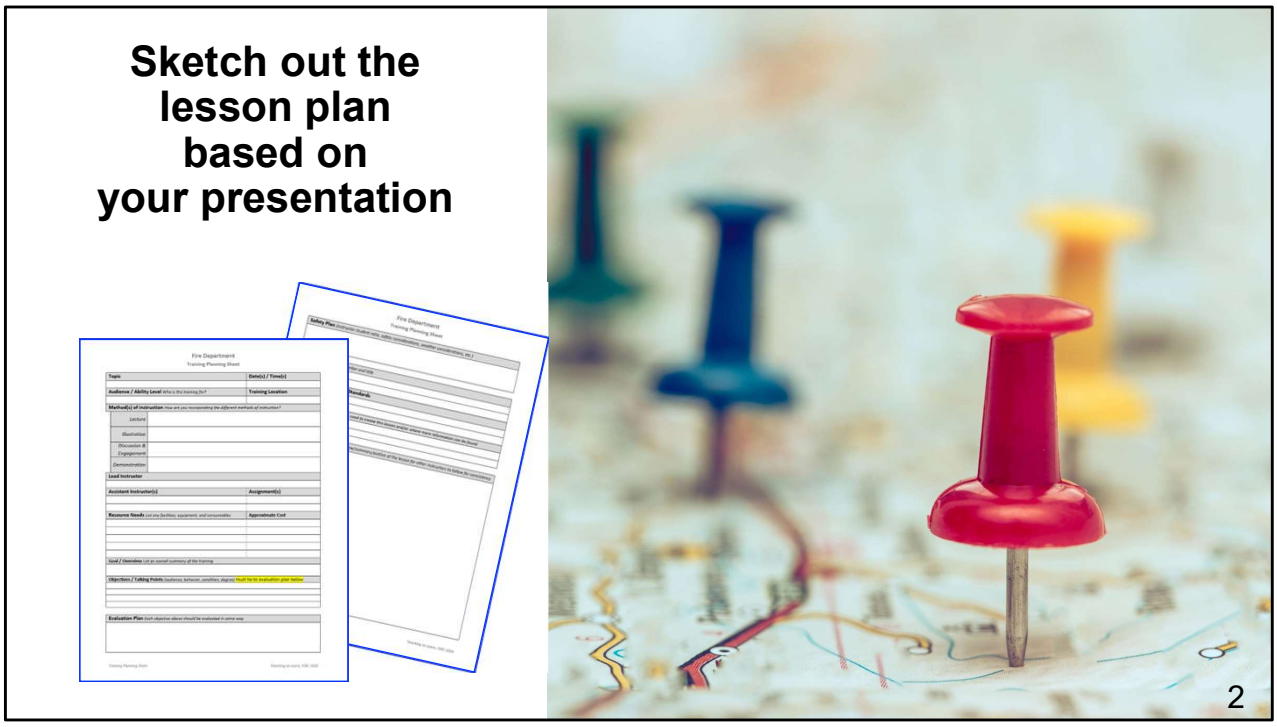
Why Lesson Plans Matter

The difference between a slide deck and a lesson plan: a slide deck is a visual aid; a lesson plan is the instructional architecture.

Many fire service instructors have great content but no structured plan for HOW learners will engage with it.

Show a side-by-side comparison: a typical fire service slide deck (50 text-heavy slides, no activities, no evaluation) vs. the same content structured as a lesson plan (clear objectives, engagement hooks, learner activities, formative checks, evaluation).

"One of these is a teleprompter. The other is a teaching plan."



Aligning presentation with lesson plan

Objectives?

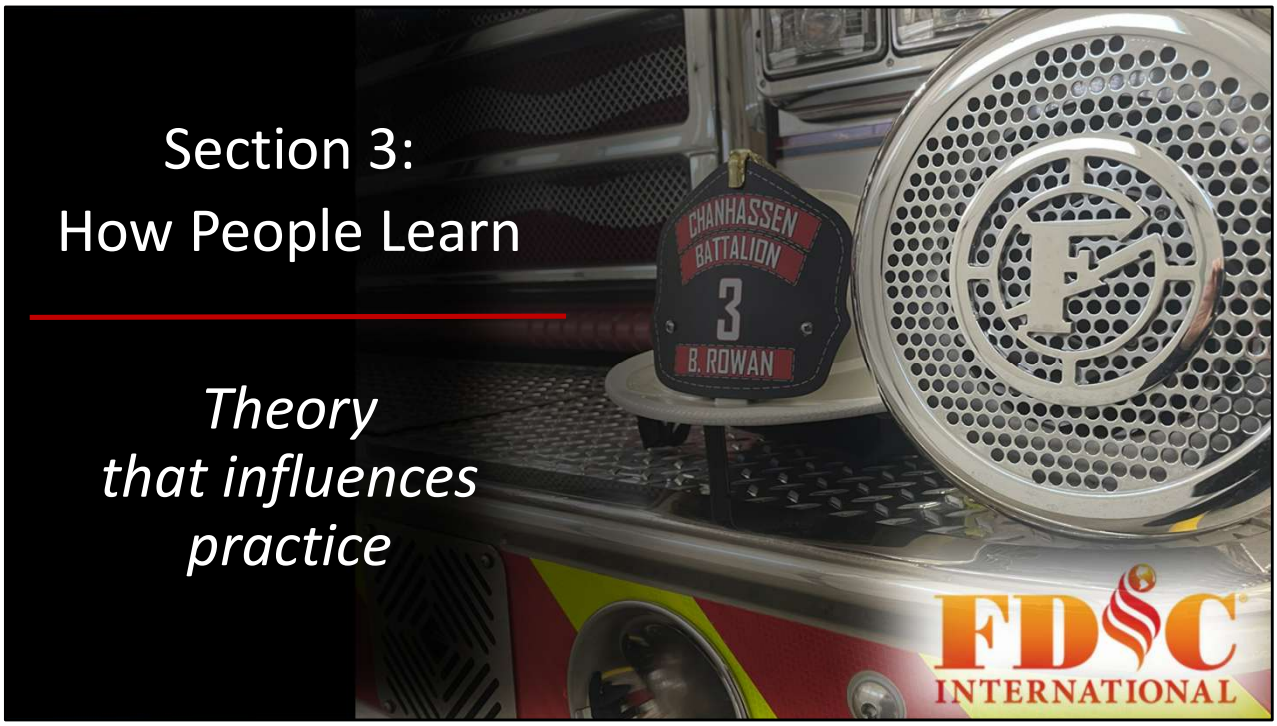
Key takeaways?

Desired skills

Prereq skills needed?

Evaluation? Even an evaluation plan?

Common pushback: "I don't have time to write lesson plans for every class." Response: "Start with one. Your most-delivered class. The template makes it faster than you think."



Module 3 Learning Objectives

- Differentiate between intrinsic, extraneous, and germane cognitive load and identify sources of each in fire service instructional materials.
- Apply Kolb's experiential learning cycle to design instruction that moves learners through all four stages.
- Explain how transformative learning and self-determination theory inform instructional design choices.

Methodology Integration — Module 3

- **Cognitive Load Theory:** Primary — taught in depth and immediately applied
- **Experiential Learning:** Primary — Kolb's cycle taught and connected to fire service practice
- **Transformative Learning:** Challenging assumptions about "good" instruction
- **Self-Determination Theory:** Connected to workshop design and participant instruction
- **Storytelling:** Fire service examples and analogies throughout

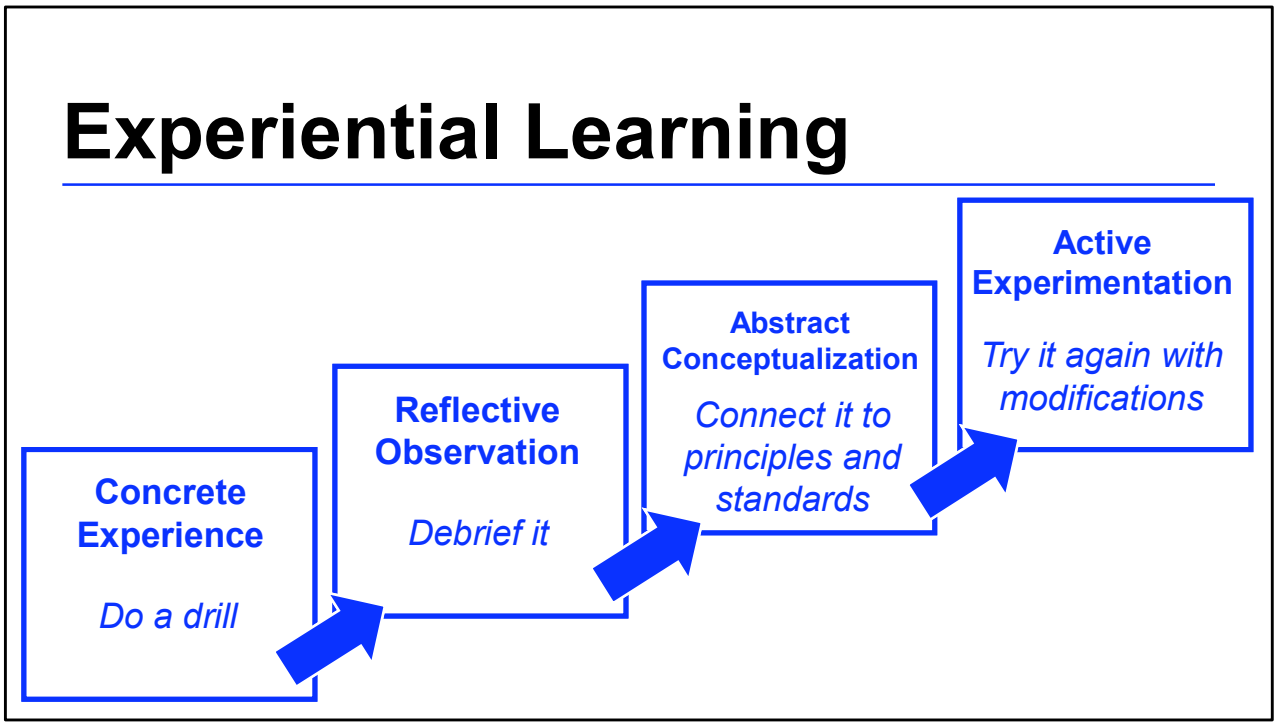
Watch for: "Theory fatigue" — this is the most concept-heavy module. Keep energy high with interactive elements and concrete examples.

- **Learning is a change in a person's ability to behave in certain ways.**

1. Two key factors:
    1. Experience with the subject (field)
    2. Practice (classroom)
2. Can occur
    1. Formally (classroom)
    2. Informally (around the dinner table)
3. Formal learning is the direct result of a program designed by an instructor.
    1. For example, adult learner may intentionally set out to take classes.
4. Informal learning occurs spontaneously and continually changes behavior.
5. Ideally, learning is created through the blending of individual curiosity, reflection, and adaptation.

- **Learning takes time and patience.**

1. As a fire and emergency services instructor, you have the opportunity to influence fire fighters positive at all levels of the fire department (Figure 21).
2. As a leader in the fire department, you have a responsibility to:
    1. teach information.
    2. hone skills.
    3. promote positive values and motivation.
3. Classroom learning plus street experience equals wisdom.
    1. You have a major impact on the first part of the equation.
4. Each student has different ways that they understand information.
    1. Each of element of a source text (words, images) allows different learner characteristics to be experienced.



Experiential Learning (Kolb)

Kolb's 4-stage cycle:

Concrete Experience (do a drill) → **Reflective Observation** (debrief it) → **Abstract Conceptualization** (connect it to principles and standards) → **Active Experimentation** (try again with modifications).

Fire service connection: *"This is how firefighters naturally learn. The instructor's job is to design experiences that complete the full cycle."*

Common mistake: jumping from experience straight to the next experience without reflection or conceptualization.

"Sound familiar? We run a drill, say 'good job,' and move to the next drill. We skip the learning."

Reference to article: **"Experiential Learning in the Fire Service"** (*Fire Engineering*, April 2025). Briefly share the article's core argument: the fire service already uses experiential learning intuitively; making it intentional amplifies outcomes.

Background:

- **Experiential Learning Theory (ELT)** holds that knowledge is created through the transformation of experience. Kolb's four-stage cycle — *Concrete Experience → Reflective Observation → Abstract Conceptualization → Active Experimentation* — provides the backbone of this workshop. Developed drawing from the foundational work of Dewey, Lewin, and Piaget, ELT prioritizes experience-to-knowledge conversion, which is essential in firefighter training where procedural knowledge must be built through doing, reflecting, and refining.

Application:

- **Workshop Application:** Each module moves participants through the full cycle. They experience activities (concrete experience), debrief what happened (reflective observation), connect to theory and principles (abstract conceptualization), and then apply insights to revise their own presentations (active experimentation). The hands-on work sessions serve as the active experimentation phase, closing the loop.

Why it matters: Emergency services are built on *doing*, reflecting, adjusting, and doing again.

- **Cycle:** Concrete experience → Reflective observation → Abstract conceptualization → Active experimentation

Fire/EMS application: Live burns, EMS simulations, after-action reviews, VR/AR drills, skills labs.

Experiential Learning: Workshop Overview

Purpose

- This overview introduces Experiential Learning as a foundational approach for this workshop. It explains how adults learn best through direct experience, reflection, conceptualization, and application—making it especially powerful for fire and emergency medical services, where learning is inherently hands-on and performance-driven.

- **What Is Experiential Learning?**
- Experiential Learning, based on the work of David Kolb, is a cycle in which learners gain understanding by **doing**, **reflecting**, **conceptualizing**, and **applying**. It emphasizes active participation and meaning-making rather than passive information intake.
- Experiential learning is particularly effective for adult learners because it:
  - Builds on prior experience
  - Encourages reflection and critical thinking
  - Supports skill development through practice
  - Strengthens confidence and judgment
  - Mirrors real-world complexity

Kolb's Experiential Learning Cycle

- Experiential learning follows four interconnected stages:

1. Concrete Experience

- Learners engage in a hands-on activity or scenario.
  In Fire/EMS: Performing a patient assessment, conducting a size-up, or running a tactical drill.

2. Reflective Observation

- Learners reflect on what happened, what worked, and what didn't.
  In Fire/EMS: Debriefing after a simulation or incident, reviewing actions and outcomes.

3. Abstract Conceptualization

- Learners connect their experience to concepts, models, or best practices.
  In Fire/EMS: Linking actions to protocols, fire behavior principles, or leadership frameworks.

4. Active Experimentation

- Learners apply new insights to future situations.

In Fire/EMS: Running the scenario again with adjustments, applying new strategies on the next call.

Why Experiential Learning Matters in Fire and Emergency Medical Services

- Fire and EMS work is:
  - High stakes
  - Hands-on
  - Dynamic
  - Team-based
  - Judgment-intensive
- Experiential learning mirrors these realities by:
  - Allowing safe practice of high-risk, low-frequency events
  - Building muscle memory and automaticity
  - Strengthening decision-making under pressure
  - Supporting teamwork and communication
  - Encouraging reflective practice and continuous improvement

How Experiential Learning Appears in This Workshop

- Experiential learning is embedded throughout the workshop design:
  - **Elicit and Engage Phases**
    - Participants draw on their own teaching experiences and identify instructional challenges.
  - **Scenario-Based Activities**
    - Learners analyze and respond to realistic instructional situations.
  - **Video Analysis and Case Discussions**
    - Participants observe teaching in action and reflect on effectiveness.
  - **Lesson Redesign**
    - Learners apply new concepts to redesign their own instruction.
  - **Debriefing Practice**
    - Structured reflection reinforces learning and models effective facilitation.
  - **Extend Phase**
    - Participants plan how to apply new strategies in their real-world teaching.

Integration with Other Frameworks

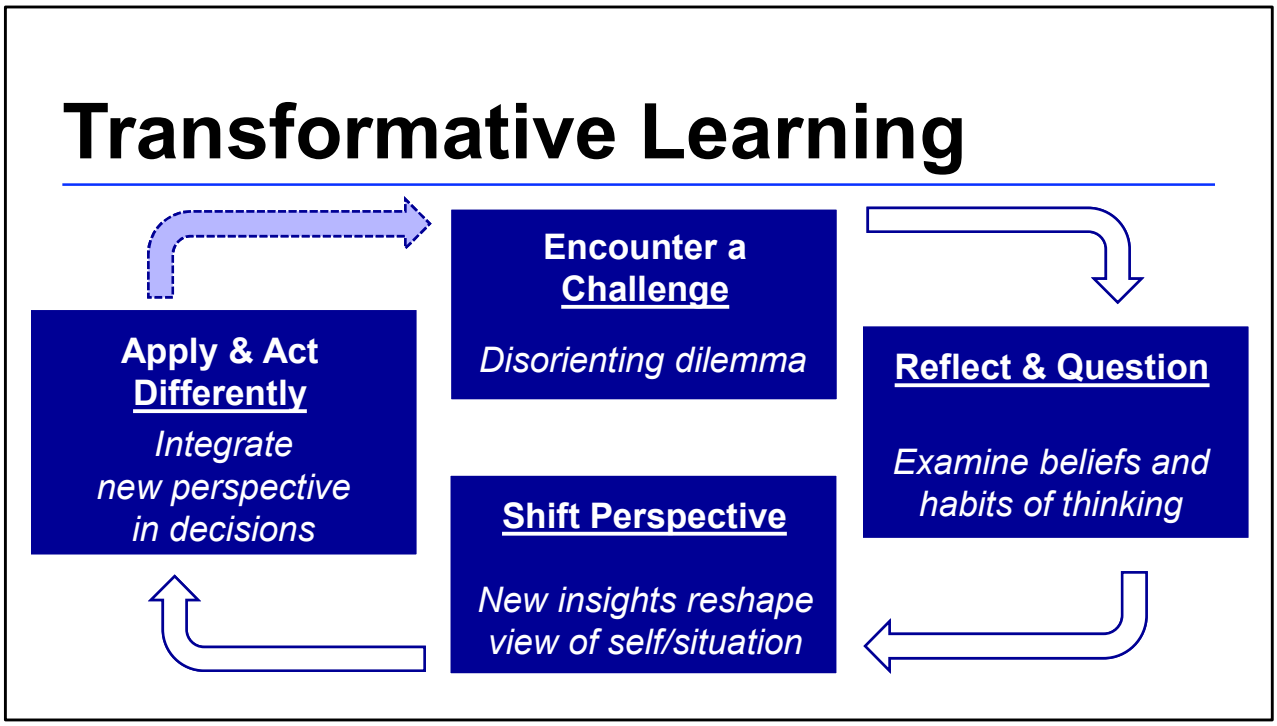
- **Adult Learning Theory:** Experience is central to adult learning; experiential methods honor that.
- **Transformative Learning:** Reflection on experience drives perspective shifts.
- **Cognitive Load Theory:** Hands-on practice distributes cognitive load and builds automaticity.
- **Backward Design:** Experiences are aligned with outcomes and assessments.
- **7E Model:** Explore, Elaborate, and Extend phases rely heavily on experiential learning.
- **Bloom's Domains:** Engages cognitive, psychomotor, and affective learning.

Key Takeaways

- Experiential learning is essential for building competence and confidence in Fire/EMS.
- Learning is most powerful when learners engage, reflect, conceptualize, and apply.
- This workshop models experiential learning to help instructors design meaningful, performance-based instruction.

Reflection Prompt

- *Think of a powerful learning experience you've had in the field. What made it impactful, and how can you recreate that experience for your learners?*



Transformative Learning (Mezirow, 1978)

Mezirow's theory: adults learn most deeply when existing frames of reference are challenged.

The "disorienting dilemma" — a moment that doesn't fit what we thought we knew.

In the fire service: *"When has a call, a training, or a student reaction made you rethink how you teach?"*

Brief pair-share (2 min). How to create safe disorienting dilemmas in instruction: case studies with unexpected outcomes, devil's advocate positions, "what if" scenarios.

The facilitator's role: create **psychological safety** for learners to examine their assumptions without feeling threatened. *"You can challenge someone's thinking without attacking their*

competence."

Reference to article: **“Transformative Learning to Enhance the Fire Service"** (*Firefighter Nation*, March 2026).

- The article's 10-phase framework gives you a design lens participants can apply when converting presentations into lesson plans.
  - Ask:
    - *"Does your presentation create space for any of these phases — reflection, discourse, trying new roles? Or does it just deliver content?"*
- This is a powerful filter. Most fire service presentations skip phases 2–9 entirely — they present information (phase 7) without building in the disorienting dilemma, reflection, or discourse that makes learning stick.

Background:

- **Transformative Learning Theory** posits that adults learn most profoundly when their existing frames of reference — assumptions, beliefs, expectations — are challenged and revised. The process begins with a **disorienting dilemma**, moves through critical reflection, and results in a perspective transformation that changes how the learner acts.

Application:

- The entire workshop is structured as a transformative arc. Module 1 opens with a disorienting dilemma (the gap between what participants believe makes a good instructor and what the evidence shows). Modules 2–5 provide the critical reflection and new frameworks. Module 6 closes with perspective transformation and action planning.

Why it matters: Critical for leadership development, culture change, wellness, and decision-making under uncertainty.

Focus: Challenging assumptions, reframing mental models, reflective dialogue.

Fire/EMS application: Bias training, leadership academies, wellness programs, post-critical incident learning.

- Why Transformative Learning Matters in the Fire Service

- Highlight:
  - Generational shifts
  - Research-driven operations
  - Increased focus on wellness and inclusion
  - Need for adaptive, reflective leaders

Transformative Learning: Workshop Overview

- **Purpose**
- This overview introduces transformative learning as a core framework for this workshop. It explains how adults shift their perspectives through critical reflection, dialogue, and application—making it a powerful foundation for instructional design, leadership development, and fire service education.

What Is Transformative Learning?

- Transformative learning is a theory developed by Jack Mezirow that describes how adults change their frames of reference—how they see themselves, their work, and the world. It goes beyond acquiring new skills or knowledge; it reshapes beliefs, assumptions, and habits of mind.
- Transformative learning occurs when individuals:
- Confront a challenge or dilemma that disrupts their current thinking
- Reflect critically on their assumptions
- Engage in dialogue with others
- Experiment with new roles or behaviors
- Integrate new perspectives into their identity and practice

Mezirow's Phases of Transformative Learning

- While not always linear, transformative learning often includes the following phases:
  - **Disorienting Dilemma** – A challenge or realization that current thinking is insufficient.
  - **Self-Examination** – Emotional and cognitive reflection on beliefs and assumptions.

- **Critical Assessment of Assumptions** – Questioning long-held perspectives.
- **Recognition of Shared Experience** – Understanding that others have similar challenges.
- **Exploration of New Roles or Actions** – Considering alternative approaches.
- **Planning a New Course of Action** – Identifying steps for change.
- **Acquiring Knowledge and Skills** – Learning what is needed to enact change.
- **Trying New Roles** – Practicing new behaviors or strategies.
- **Building Competence and Confidence** – Strengthening new approaches.
- **Reintegration** – Incorporating new perspectives into one's identity and practice.

Application to This Workshop

- Transformative learning is woven throughout the workshop design:
  - **Elicit Phase**
    - Participants surface their teaching identity, assumptions, and habits. This creates the foundation for transformation.
  - **Backward Design Activity**
    - The gap between current practice and performance-based design creates a productive disorienting dilemma.
  - **Video Analysis and 7E Model**
    - Participants critically examine their instructional choices and explore new approaches.
  - **Instructional Methods and Slide Design**
    - Learners acquire new skills and strategies to support their evolving teaching identity.
  - **Final Lesson Redesign**
    - Participants plan and practice new roles, integrating new perspectives into their instructional practice.
  - **Closing Reflection**
    - Learners articulate how their thinking has shifted and commit to reintegration.

Integration with Other Frameworks

- **Adult Learning Theory:** Builds on experience and reflection to support identity-level change.
- **Maslow's Hierarchy:** Psychological safety and belonging are prerequisites for transformation.
- **Thorndike's Laws:** Practice and positive reinforcement strengthen new behaviors.
- **Bloom's Domains:** Transformation spans cognitive, affective, and behavioral domains.

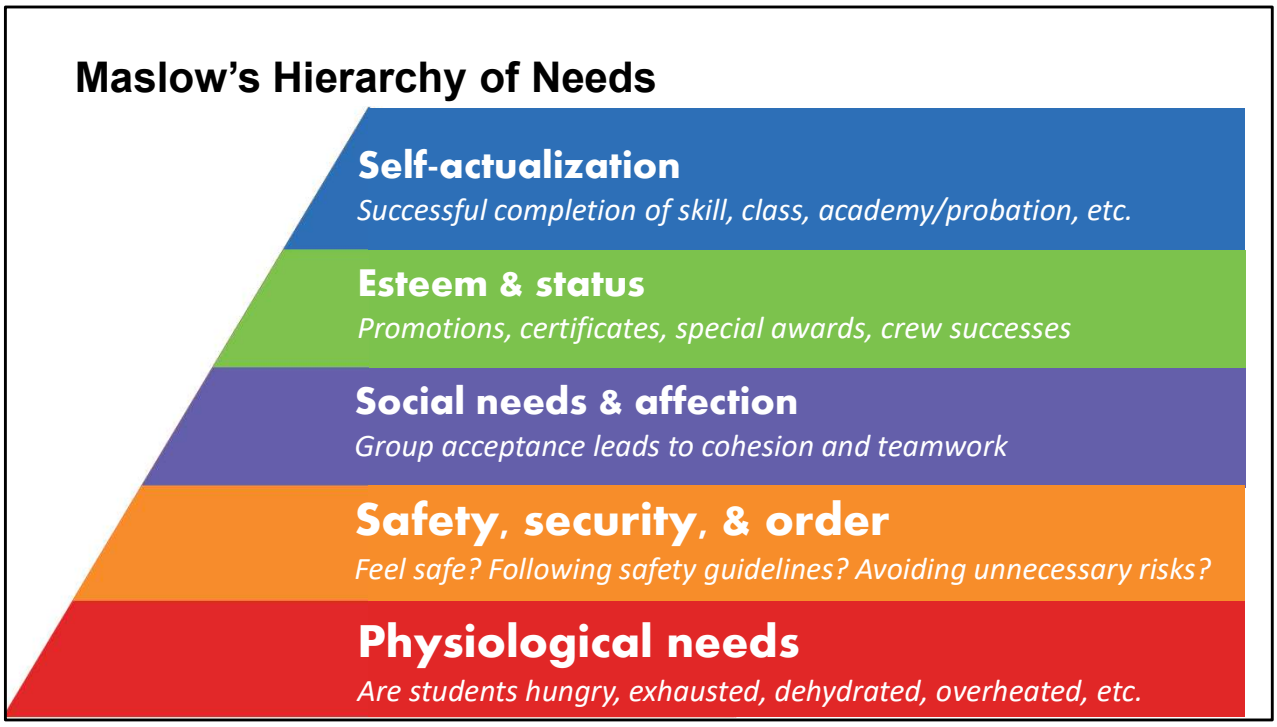
- **7E Model:** Elicit and Extend phases bookend the transformative process.

Key Takeaways

- Transformative learning reshapes how adults think, not just what they know.
- Reflection, dialogue, and application are essential for lasting change.
- Instructional design that challenges assumptions leads to deeper learning.
- This workshop intentionally creates conditions for perspective transformation.

Reflection Prompt

- *What assumption about teaching or learning has shifted for you today, and how will that shift influence your instructional practice moving forward?*



Purpose

- This overview connects Maslow's Hierarchy of Needs to adult learning and instructional design principles used throughout the workshop. It helps instructors recognize how meeting learners' psychological and emotional needs enhances engagement, retention, and transformation.

The Five Levels of Maslow's Hierarchy

1. Physiological Needs

- Basic survival requirements—food, water, rest, and physical comfort.
  In the workshop: Ensure learners have a comfortable environment (temperature, seating, breaks). When these needs are met, cognitive focus increases.

2. Safety Needs

- Security, stability, and freedom from fear.
  In the workshop: Create psychological safety through respectful dialogue, clear expectations, and nonjudgmental facilitation. Learners must feel safe to share

experiences and make mistakes.

3. Belonging and Love Needs

- Connection, acceptance, and community.
  In the workshop: Foster collaboration and trust. Use pair-share, small group discussions, and identity-based reflection to build belonging among participants.

4. Esteem Needs

- Recognition, achievement, and confidence.
  In the workshop: Validate expertise and contributions. Encourage peer recognition and celebrate growth. Provide opportunities for mastery through applied activities and feedback.

5. Self-Actualization Needs

- Personal growth, fulfillment, and realizing potential.
  In the workshop: Encourage reflection, creativity, and autonomy. Link learning to real-world application and leadership identity. This is where transformative learning occurs.

Application to Adult Learning

- Maslow's model aligns with adult learning theory by emphasizing readiness, relevance, and respect. Adults learn best when their basic and psychological needs are met, allowing them to focus on higher-order goals such as mastery and transformation.
- **Elicit Phase:** Addresses safety and belonging—learners share experiences and feel heard.
- **Engage and Explore Phases:** Support esteem through active participation and discovery.
- **Extend Phase:** Promotes self-actualization—learners apply new insights to their professional practice.

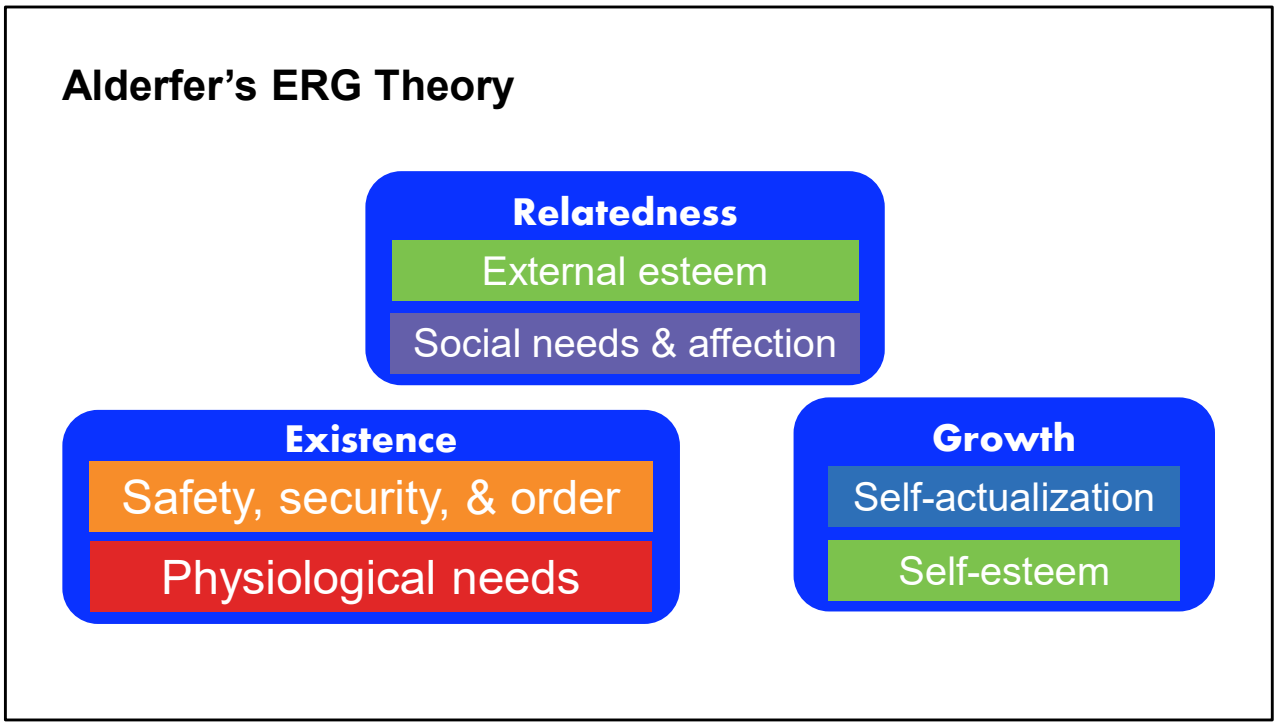
Key Takeaways

- Meeting lower-level needs creates conditions for higher-level learning.
- Psychological safety and belonging are prerequisites for transformation.
- Self-actualization represents the ultimate goal of adult education—empowered,

reflective, and capable instructors.

Reflection Prompt

- *Which level of Maslow's hierarchy do you most intentionally address in your teaching, and which could you strengthen to support deeper learning?*



<u>Alderfer's ERG Theory</u> — Brief mention as a historical bridge

Clayton Paul Alderfer, an American psychologist, expanded on Maslow's well-known hierarchy of needs to create a unique framework called the ERG theory. This model was developed between the years 1961 to 1978. In his ERG Theory, individuals can focus on multiple needs at the same time. For instance, a person might be motivated by their growth and relatedness needs simultaneously, without having their basic existence needs fully met. Alderfer argues that people can have different priorities when it comes to their needs, depending on their unique life situations. A good example would be that of an ambitious artist who, despite facing financial difficulties, is driven more by their passion for art (a growth need) than by the need to secure basic necessities (an existence need).

- ERG fixes one of Maslow's biggest problems — the rigid sequence — by allowing needs to be pursued simultaneously and introducing the frustration-regression principle (when higher needs are blocked, people double down on lower needs). That's a genuine conceptual improvement.

- But ERG has its own issues:
- **Limited empirical support.** Even its proponents acknowledge this. Ivancevich, Konopaske & Matteson noted that *"ERG has not stimulated a great deal of research"* — there simply isn't a robust evidence base compared to SDT.
- **Still too simplistic.** Critics argue ERG collapses Maslow's five levels into three but doesn't fundamentally change the *type* of thinking — it's still a categorical needs model without the mechanistic explanation of *how* motivation actually works.
- **No fire service literature.** Unlike SDT, there are no published applications of ERG theory to fire, EMS, military, or law enforcement contexts. It's an organizational psychology framework that never crossed into public safety.
- **The frustration-regression principle is subjective.** It's hard to measure and harder to design around. It describes what might happen when needs go unmet but doesn't give instructors tools to prevent it.

Best use: A 60-second transitional mention. *"Alderfer took Maslow's five levels and compressed them to three — Existence, Relatedness, Growth — and said you can pursue all three at once. That was an improvement. But the framework we're going to spend time on goes further — it doesn't just say what needs exist, it explains how motivation actually works."* Then move to SDT.

Alderfer's ERG Theory: Workshop Overview

Purpose

- This overview introduces **Alderfer's ERG Theory** as a streamlined alternative to Maslow's hierarchy. It helps instructors understand how **Existence**, **Relatedness**, and **Growth** needs influence learner motivation, engagement, and performance—especially in fire and emergency medical services, where psychological safety, teamwork, and professional development are essential.

What Is ERG Theory?

- Clayton Alderfer condensed Maslow's five levels into **three flexible, overlapping categories**:
  – **Existence** – Basic physical and psychological needs
  – **Relatedness** – Social connection, belonging, and interpersonal support
  – **Growth** – Personal development, mastery, and self-actualization
- Unlike Maslow's strict hierarchy, ERG Theory allows movement **up or down** the

continuum. Learners may pursue multiple needs simultaneously, and frustration in one area can increase motivation in another.

- This flexibility makes ERG especially relevant for adult learners and operational environments.

The Three ERG Needs

1. Existence Needs

Physical and psychological safety, comfort, and well-being.

- **In Fire/EMS:**
  – Safe training environments
  – Clear expectations and structure
  – Adequate rest, hydration, and PPE
  – Psychological safety during learning and feedback
- **In This Workshop:**
  – Respectful facilitation
  – Predictable structure (7E model)
  – Breaks, pacing, and cognitive load management

2. Relatedness Needs

Connection, belonging, trust, and meaningful relationships.

- **In Fire/EMS:**
  – Crew cohesion
  – Trust between partners
  – Effective communication
  – Supportive learning culture
- **In This Workshop:**
  – Pair-share and group discussions
  – Identity reflection and shared experiences
  – Collaborative scenario analysis
  – Peer feedback during lesson redesign

3. Growth Needs

Mastery, competence, autonomy, and personal development.

- **In Fire/EMS:**
  - Advancing clinical skills
  - Improving tactical decision-making
  - Leadership development
  - Pursuing instructor or officer roles
- **In This Workshop:**
  - Building instructional confidence
  - Redesigning lessons using backward design
  - Applying the 7E model
  - Strengthening teaching identity and instructional judgment

Why ERG Theory Matters in Fire and Emergency Medical Services

- Fire/EMS learners often experience fluctuating needs due to stress, shift work, operational demands, and team dynamics. ERG Theory helps instructors:
- Recognize when learners need **safety** before they can engage
- Build **belonging** to support teamwork and communication
- Foster **growth** through challenge, reflection, and practice
- Understand regression (e.g., frustration → need for connection or safety)
- Create learning environments that support resilience and readiness

How ERG Theory Appears in This Workshop

- **Existence:** Psychological safety, clear structure, cognitive load management
- **Relatedness:** Collaborative activities, shared reflection, peer learning
- **Growth:** Lesson redesign, scenario facilitation, instructional identity development
- ERG Theory is woven throughout the workshop to support both emotional and cognitive readiness for learning.

Integration with Other Frameworks

- **Maslow:** ERG condenses and modernizes Maslow's hierarchy

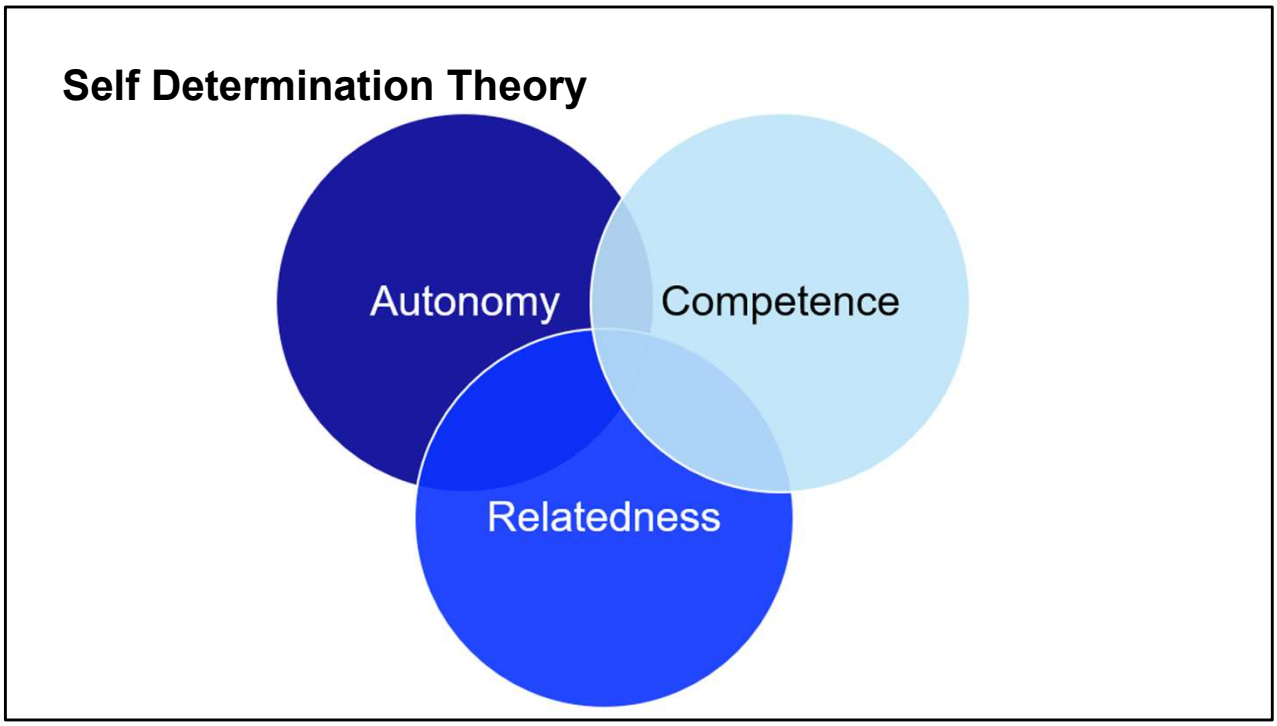
- **Adult Learning Theory:** Supports autonomy, relevance, and experience
- **Transformative Learning:** Growth needs align with perspective transformation
- **Cognitive Load Theory:** Existence needs influence mental capacity
- **7E Model:** Elicit and Extend phases support relatedness and growth
- **Backward Design:** Growth needs drive performance-based outcomes

Key Takeaways

- ERG Theory provides a flexible, realistic model of learner motivation.
- Fire/EMS instruction must support safety, belonging, and growth simultaneously.
- This workshop intentionally meets all three needs to promote deep, lasting learning.

Reflection Prompt

- *Which ERG need do your learners struggle with most, and how might you adjust your instruction to support it?*



Self-Determination Theory (Deci & Ryan)

Brief but powerful. Deci & Ryan: intrinsic motivation comes from **autonomy**, **competence**, and **relatedness**.

Point out how this workshop models SDT: participants choose what to revise (autonomy), build skills progressively (competence), and collaborate with peers (relatedness).

Application: *"How can you build SDT into your own instruction? Offer choices. Scaffold difficulty. Create community."*

Quick examples: letting students choose which scenario to work on, providing skill progression rather than all-or-nothing assessment, building in partner and group work.

Background:

- **Self-Determination Theory (SDT)** identifies three innate psychological needs that drive intrinsic motivation: **autonomy** (sense of choice and control), **competence** (feeling effective), and **relatedness** (connection to others).

Application:

- Woven through Modules 3–5. Participants choose their own revision priorities (autonomy), build skills through scaffolded activities that increase in complexity (competence), and engage in peer collaboration and structured feedback (relatedness). The workshop models what SDT-informed instruction looks like.

- **Empirical foundation is massive.** SDT is one of the most extensively researched motivation theories in psychology. A 2025 search of Web of Science returned over 16,600 articles explicitly naming the theory, with over 60 meta-analyses reviewed by Ryan and colleagues alone. This isn't a niche framework — it's one of the dominant theories of human motivation in the world, validated across cultures, professions, and contexts.
- **It's been validated in uniformed/hierarchical organizations.** Loverre et al. (2024) published a systematic review in the *Journal of Police and Criminal Psychology* specifically examining SDT's application in military and police organizations and training institutes — finding positive associations with well-being, engagement, prosocial behavior, and internalized motivation. Fire service shares the same organizational DNA: paramilitary structure, high-stress operations, team-dependent performance.
- SDT boils human motivation down to three innate psychological needs that every fire officer can immediately operationalize:
  - **Autonomy:** The need to feel ownership over one's actions and choices
    - Fire Service: Give the crew member the *why* and let them problem-solve the *how*. Stop micromanaging every drill evolution. Let company officers

design their own training plans within standards.

- **Competence:** The need to feel capable and effective – mastery that grows
  - Fire Service: Provide skill progression with clear benchmarks. Give feedback that builds capacity, not feedback that communicates judgment. Reps matter, but successful reps matter more.
- **Relatedness:** The need for genuine connection, trust, and belonging
  - Fire Service: Crew cohesion isn't a soft skill – it's survival mechanism. Training environments where people feel psychologically safe to fail, ask questions, and be vulnerable produce better operators.

It explains what Maslow can't. Why does a firefighter skip meals and operate in IDLH environments — violating "physiological" and "safety" needs — to save a stranger? Maslow has no clean answer. SDT does: their needs for **competence** (I'm good at this), **relatedness** (my crew is counting on me), and **autonomy** (I chose this profession and its values) are being fulfilled *simultaneously*, and those three needs are powerful enough to override physical discomfort and danger. That's not a hierarchy — it's a motivational engine.

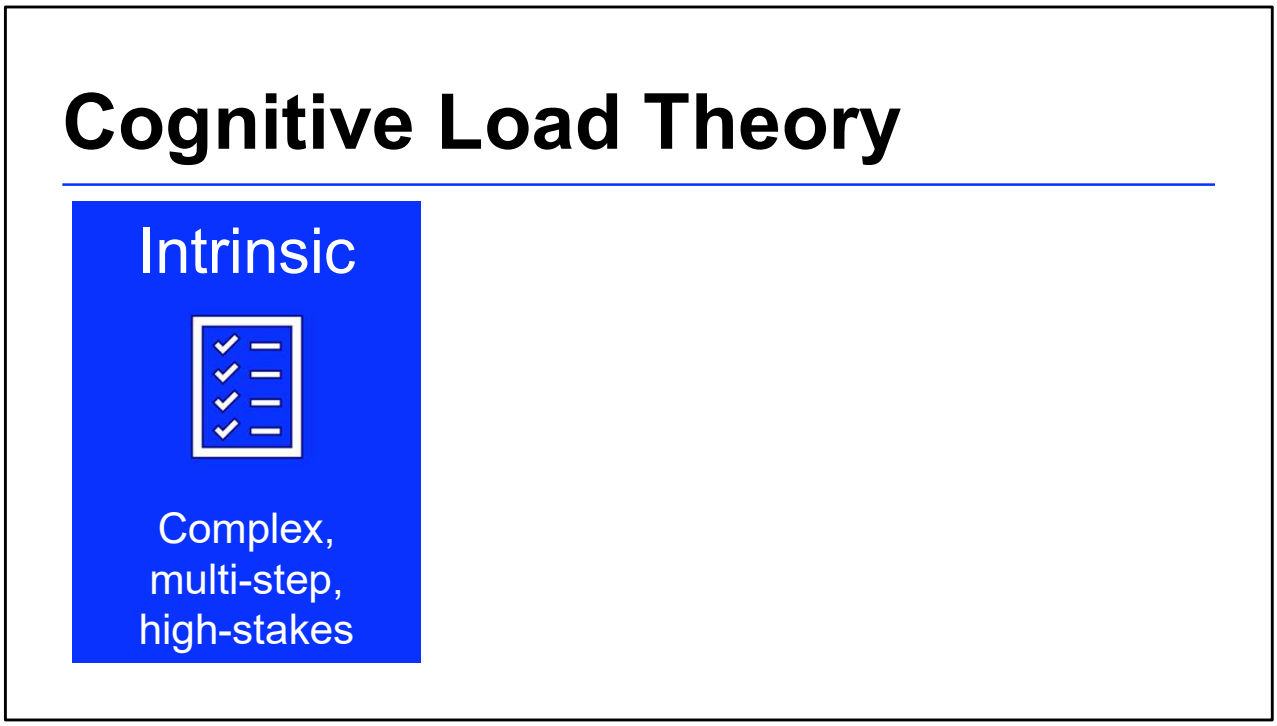
It translates directly into instructional design. SDT gives instructors a three-question diagnostic for every training session they design:

- *"Does this training give learners any ownership or choice?"* → Autonomy
- *"Does this training build genuine skill with appropriate challenge?"* → Competence
- *"Does this training strengthen crew trust and connection?"* → Relatedness
- If the answer to all three is no, the training will produce compliance at best and disengagement at worst — regardless of how well-designed the content is.

SDT directly informs modern instructional design and leadership.

- SDT aligns with:
- Transformative learning
- Adult learning theory
- Trauma-informed leadership
- Psychological safety
- Modern coaching and feedback models

- Maslow and ERG are helpful for conceptual grounding, but SDT provides **actionable, research-backed strategies** for designing environments where people thrive.



Cognitive Load Theory (CLT) (Sweller, 1988)

Three types of cognitive load explained with fire service context:

- A new recruit learning SCBA use has high **intrinsic load** (complex, multi-step, high-stakes).
- Bullet-heavy slides with small text and no structure ADD **extraneous load**.
- Well-designed practice scenarios BUILD **germane load**.

Practical strategies to reduce extraneous load:

- *chunking* (break content into manageable segments)
- *signaling* (headings, bold, visual cues that guide attention)
- *redundancy principle* (don't read aloud what's on screen)
- *coherence principle* (remove decorative elements that don't teach)

- *modality principle* (use visuals + narration rather than visuals + text)

Show "before and after" slide examples — a cluttered fire service slide (wall of text, clip art, tiny font) vs. a redesigned version applying CLT principles (one idea, clean visual, clear heading).

Interactive: "Cognitive Load Audit" — participants examine 2–3 sample slides projected on screen and identify sources of extraneous load. Whole-group discussion.

Background:

- **Cognitive Load Theory (CLT)** explains how working memory capacity affects learning. It identifies three types of cognitive load:
  - **Intrinsic load** — the inherent complexity of the content itself (determined by element interactivity)
  - **Extraneous load** — load caused by poor instructional design (e.g., cluttered slides, redundant information)
  - **Germane load** — load that contributes directly to learning (schema construction and automation)

Application:

- Participants learn to identify and reduce extraneous load in their own presentations while strategically building germane load through well-designed activities. This is applied to both visual slide design and overall instructional architecture. Section 3 provides a deep dive; Section 4 and 5 extend the application.

Why it matters: Fire/EMS learners are often overloaded—especially recruits and new officers.

Instructor implications:

- Chunk content
- Reduce extraneous load
- Scaffold complex tasks

- Use worked examples

Fire/EMS application: Stepwise skill instruction, progressive complexity in scenarios, simplified slides.

Cognitive Load Theory: Workshop Overview

Purpose

- This overview introduces Cognitive Load Theory (CLT) as a practical framework for designing instruction that aligns with how the human brain processes information. It helps instructors in fire and emergency medical services create learning experiences that reduce unnecessary mental burden, support skill acquisition, and improve performance under pressure.

What Is Cognitive Load Theory?

- Cognitive Load Theory explains how the limitations of working memory affect learning. Because working memory can only hold a small amount of information at once, instructional design must be intentional to avoid overload. CLT identifies three types of cognitive load:

1. Intrinsic Load

- The inherent complexity of the material or skill being learned.
  In Fire/EMS: Patient assessment, fire behavior, and incident command naturally carry high intrinsic load.

2. Extraneous Load

- The mental effort caused by poor instructional design or distractions.
  In Fire/EMS: Overly dense slides, unclear demonstrations, or chaotic training environments increase extraneous load.

3. Germane Load

- The mental effort devoted to processing, understanding, and integrating new information.

In Fire/EMS: Scenario debriefs, guided practice, and reflection increase germane load and deepen learning.

Why CLT Matters in Fire and Emergency Medical Services

- Fire and EMS environments are complex, time-sensitive, and cognitively demanding. Effective instruction must:
- Reduce unnecessary mental clutter
- Support rapid decision-making
- Build automaticity through practice
- Prepare learners for high-stress, high-stakes situations
- CLT helps instructors design training that mirrors operational realities without overwhelming learners.

Cognitive Load Theory is embedded throughout the workshop's design:

- **Elicit Phase**
  - Surfaces prior knowledge, reducing intrinsic load by connecting new learning to existing schemas.
- **Backward Design**
  - Ensures instruction focuses only on what matters—reducing extraneous load.
- **7E Model**
  - Structures learning so that cognitive load is managed across phases: exploration, explanation, and application.
- **Slide Design Best Practices**
  - Minimizes extraneous load by using clean visuals, limited text, and purposeful design.
- **Instructional Methods**
  - Demonstrations, guided practice, and scenarios distribute cognitive load appropriately and build automaticity.
- **Transformative Learning**
  - Reflection and dialogue support germane load by helping learners integrate new perspectives.

Strategies for Managing Cognitive Load in Fire/EMS Instruction

- Break complex skills into manageable steps
- Use clear, uncluttered visuals
- Demonstrate before expecting performance
- Provide guided practice with feedback
- Use scenarios that match learners' experience levels
- Avoid unnecessary information or distractions
- Build from simple to complex

Key Takeaways

- Working memory is limited—effective instruction must respect that limit.
- Reducing extraneous load improves learning and performance.
- Fire/EMS training must balance realism with cognitive manageability.
- CLT supports safer, more confident, and more competent responders.

Reflection Prompt

- *Where in your current teaching might learners experience unnecessary cognitive load, and what changes could you make to reduce it?*

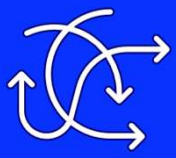

CHANHASSEN
FIRE DEPARTMENT
RIT
ENGINE 1
CHANHASSEN
FIRE DEPT.

Cognitive Load Theory

Intrinsic

Complex, multi-step, high-stakes

Extraneous



Overcomplicated, poor design

Preventable mental strain

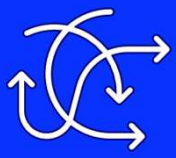

Heat Sensor Label and Protection Plates
15
Extension Ladder Components
16
Bed Section and Fly Section
17
Guides and Halyard
18
Pawls and Pulley
19
Steps and Staypoles
20
Aerial Apparatus
21
Aerial Apparatus
22
Portable Ladders
23
Straight Ladder
24
Roof Ladder
25
Extension Ladder
26
Bangor Ladder
27
Combination Ladder
28
Folding Ladder
29
Fresno Ladder
30
Inspection, Maintenance, and Service Testing
31
Inspection
32
Maintenance
33
Cleaning
34
Service Testing
35
Ladder Safety
General Safety Requirements
Lifting and Moving Ladders
Placement of Ground Ladders
Working on a Ladder
Working on a Ladder
Rescue Operations

Cognitive Load Theory

Intrinsic

Complex, multi-step, high-stakes

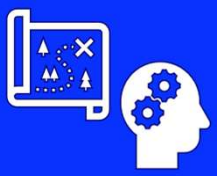
Extraneous



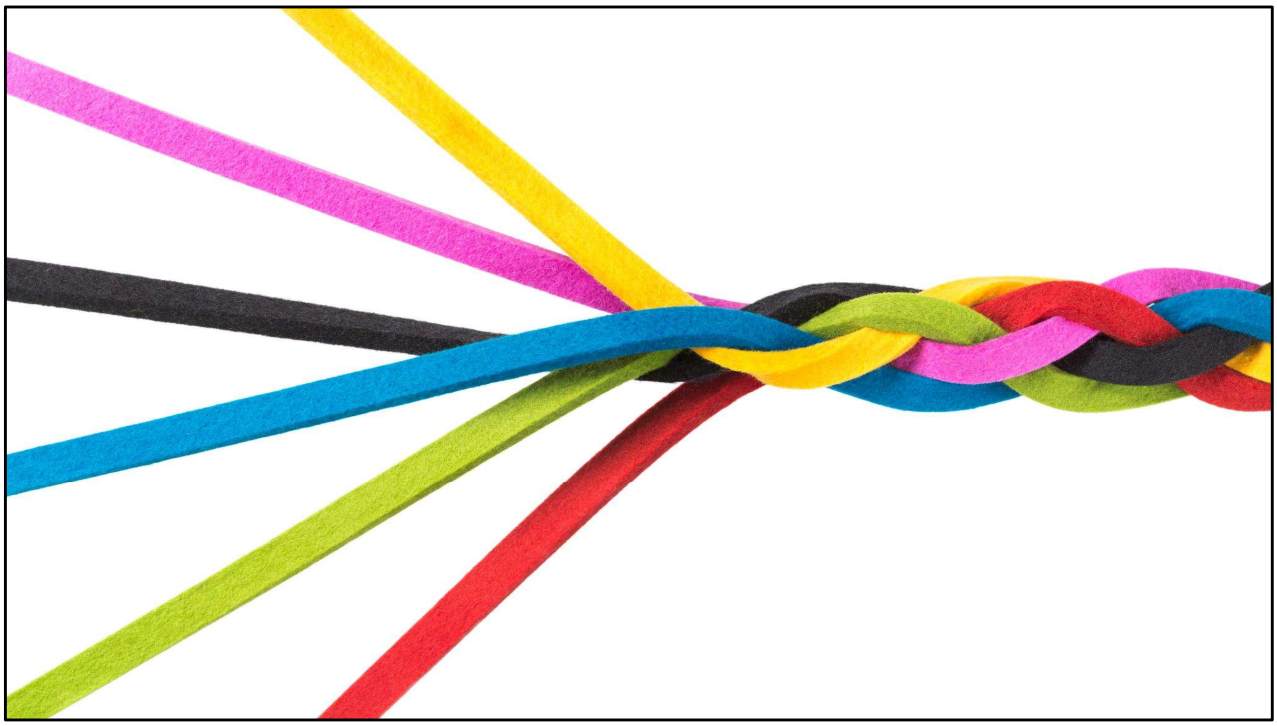
Overcomplicated, poor design

Preventable mental strain

Germane



Schema construction, automation



There is a meaningful overlap between Cognitive Load Theory (CLT) in education and concepts used in mental wellness, but they are **not the same theory** and they operate at **different levels of analysis**. They are *adjacent frameworks* that describe how humans cope with demands on limited psychological resources.

1. Shared Foundations: Limited Cognitive Resources

- Both educational psychology and mental wellness research are grounded in a core assumption:
- Human cognitive capacity is limited.

In Cognitive Load Theory (Sweller, 1988)

- The limitation is working memory capacity during learning.
- Overload impairs schema construction and understanding.

In Mental Wellness

- The limitation is mental, emotional, and attentional capacity.
- Overload contributes to stress, anxiety, burnout, and reduced functioning.

Overlap: When task demands exceed capacity—whether academic or life-related—performance and wellbeing decline.

2. Intrinsic Load ↔ Inherent Life Complexity

In CLT:

- Intrinsic cognitive load = the *inherent complexity of the material*, determined by:
  - Number of interacting elements
  - Learner's prior knowledge

In Mental Wellness:

- Comparable ideas appear as:
  - Baseline life complexity
  - Role strain (multiple demanding roles)
  - Unavoidable stressors (health, caregiving, financial realities)

Conceptual overlap:
Some demands cannot be eliminated—only *supported, scaffolded, or paced*.

- Example:
  - Learning calculus (high intrinsic load)
  - Managing a chronic illness (high inherent life demand)
  - Neither is "badly designed"—they are inherently demanding.

3. Extraneous Load ↔ Preventable Mental Strain

In CLT:

- Extraneous cognitive load = unnecessary burden caused by poor instructional

design

Mental wellness parallels include:

– Poor organizational systems
– Unclear expectations
– Information overload
– Constant interruptions
– Conflicting demands

Strong overlap here
In both fields, removing unnecessary friction reduces overload without reducing rigor or responsibility.

- Classroom example: cluttered slides
- Life example: unclear work priorities

4. Germane Load ↔ Meaning-Making and Growth

CLT (modern interpretations):

- Germane load refers to cognitive effort invested in *learning and schema construction*.

Mental wellness equivalents:

- Reflective processing
- Meaning-making
- Skill-building
- Coping strategies
- Post-traumatic growth

Overlap:
Effortful engagement that feels challenging but purposeful can be **protective rather than harmful**.

- Not all “load” is bad—some load leads to growth.

5. Where the Fields Actively Inform Each Other

- **Trauma-informed education**
  - Reduces extraneous cognitive load caused by stress and vigilance
  - Acknowledges that emotional overload impairs learning
- **Executive function & self-regulation research**
  - Bridges educational psychology and mental health
  - Focuses on planning, attention, emotional regulation
- **Burnout research**
  - Uses workload + cognitive/emotional capacity models
  - Applies to both students and educators

6. A Useful Integrative Framing

- A helpful synthesis many educators and wellness practitioners use:
- **Cognitive load describes what the task demands.**
  Mental wellness describes how the person experiences and sustains those demands over time.
- Or more simply:
- CLT helps design **better learning environments**
- Mental wellness helps support **whole humans within those environments**

Participants select 5–10 slides from their own presentation and audit them for extraneous cognitive load using the **Cognitive Load Audit Checklist**.

Identify:

text-heavy slides

missing signaling/chunking

redundant information

unclear visuals

decorative graphics that don't teach

excessive animation

Begin revisions. Facilitator circulates and coaches.

Encourage table partners to audit each other's slides — fresh eyes catch what we miss.

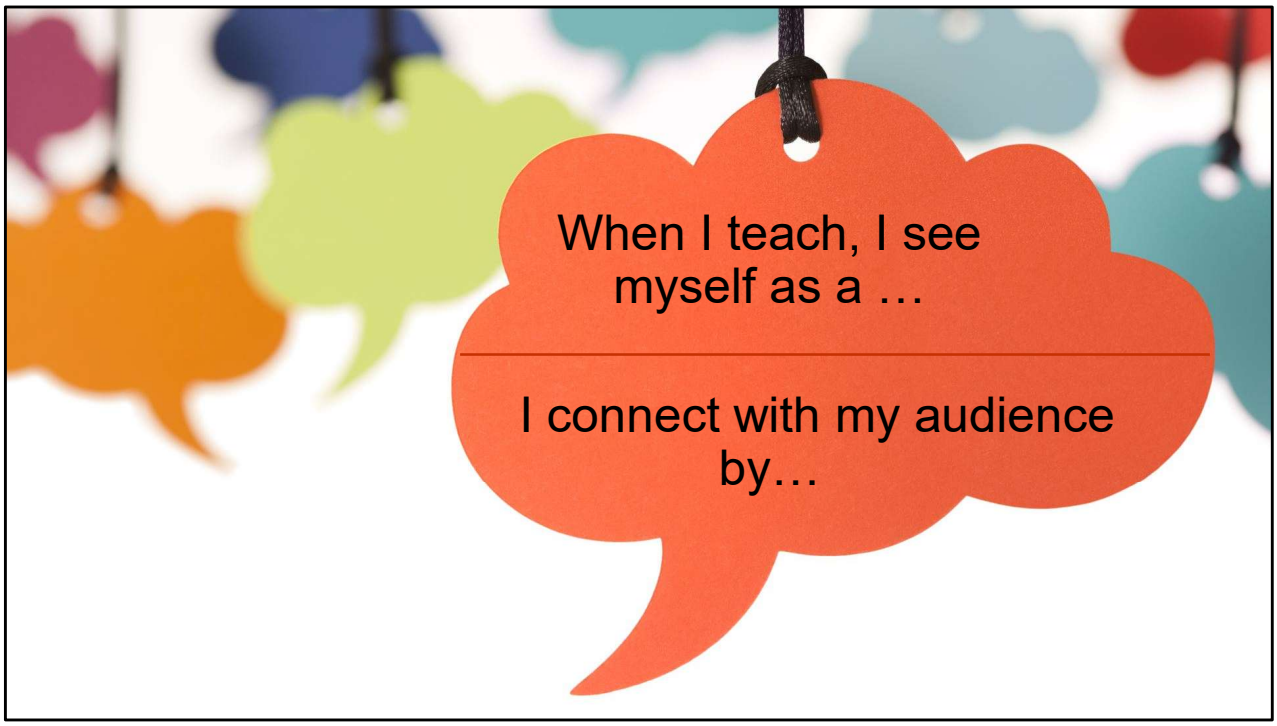
- **Transition to break:** *"You now have the theory. After break, we're going to focus on WHO you're teaching — because it matters as much as what you're teaching."*

Module 4 Learning Objectives

- Describe generational tendencies among Boomers, Gen X, Millennials, and Gen Z in the fire service and identify at least two instructional adaptation strategies for each.
- Evaluate instructional materials using UDL and accessibility principles, identifying and correcting barriers to learning.
- Identify physical, cognitive, emotional, and systemic barriers to learning and select strategies to address each.

Methodology Integration — Module 4

- **Generational Considerations:** Primary — taught and applied through Gallery Walk
- **Accessibility / UDL:** Primary — framework taught and applied through audit
- **Self-Determination Theory:** Participant choice in what to revise
- **Experiential Learning:** Gallery Walk as concrete experience; revision as active experimentation
- **Storytelling:** Generational scenarios as case-based teaching



Elicit **(5–7 minutes total)**

Teaching Identity Snapshot (Facilitator Notes)

Purpose

- To activate prior knowledge, surface assumptions about teaching, and create a baseline for the transformative learning journey. This is the *"Who am I as an instructor today?"* moment.
  - It also:
    - Builds psychological safety (Maslow)
    - Creates the **disorienting dilemma** that fuels transformative learning
    - Gives you insight into the room's teaching culture
    - Helps participants see how their identity shapes their instructional choices

Use It Later in the Wksp

- Return to the Teaching Identity Snapshot during:
  - The backward design redesign activity
  - The generational considerations section
  - The presentation techniques section
- You ask:
  - “How has your teaching identity shifted today?”
  - “What part of your identity supports backward design? What part gets in the way?”
  - This closes the loop on transformative learning.

Step 1 — Individual Reflection (2 minutes)

- Ask participants to respond to **three prompts** on a notecard, sticky note, or handout:
  - **“When I teach, I see myself as a…”** (Examples: coach, expert, facilitator, storyteller, mentor, evaluator, technician, guide)
  - **“My primary goal when I teach is to…”** (Examples: transfer knowledge, build confidence, ensure safety, prepare for operations, change behavior)
  - **“My teaching is most influenced by…”** (Examples: my mentors, my training, my experiences, my mistakes, my department culture, my learners)
- They write quickly — no overthinking.

Step 2 — Pair Share (2 minutes)

Pairs discuss:

- What they wrote
- What surprised them
- Where their identity came from
- This builds connection and primes them for deeper reflection later.

Step 3 — Whole Group Debrief (2–3 minutes)

Ask:

- “What patterns do you notice?”

- “What identities show up most often?”
- “What identities are missing?”
- You’re not judging — you’re surfacing the *current state*.

Why This Activity Matters (Theoretical Integration)

Transformative Learning

- This is the first step in Mezirow’s cycle:
- Surface existing frames of reference
- Make them visible
- Prepare for critical reflection
- Later in the workshop, when they redesign their lesson, they’ll revisit this snapshot and see how their identity has shifted.

Maslow’s Hierarchy

- Creates belonging and psychological safety
- Validates their experience
- Reduces anxiety about “being wrong”

Thorndike’s Laws of Learning

- **Readiness:** They become mentally ready to learn by articulating their current stance
- **Effect:** The activity is positive and affirming
- **Exercise:** They practice articulating their teaching philosophy

Backward Design

- This activity sets up the idea that:
- Teaching identity influences outcome selection
- Identity shapes what instructors think “good teaching” looks like

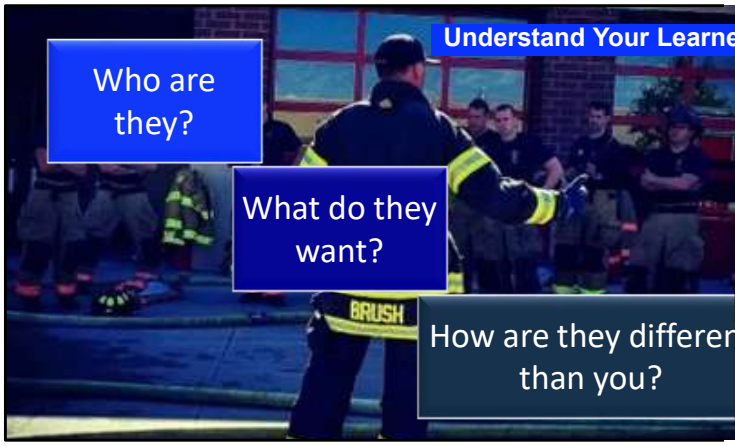
- Identity often drives content-first design
- You'll use this later to show how identity can shift toward **performance-first** design.

5E / 7E Model

- This activity is the **Engage** phase:
- It taps into prior knowledge
- It activates curiosity
- It primes them for exploration

Bloom's Learning Domains

- Participants reflect in:
- **Affective domain:** beliefs, values, attitudes
- **Cognitive domain:** analyzing their own practice



- Who are your learners?
- Your learners see the word differently than you do, and to design effective learning experiences you need to understand their view of the world.

- **What do your learners want?**
- The more you can consider your learners' attitudes and motivations, the better you can tailor the learning experience.
- Think about why they are there, what they want to get out of the experience, what they don't want and what they like which may be different from what they want).
  - Why are they there?
  - "Just tell me what I need to know" learner
  - "Hey, this is cool!" learner
  - "I need to solve a problem" learner
  - "This is a required course" learner
  - "Ohh, shiny!" learner
  - "I fear change!" learner
  - "I pretty much know all of this already" learner
  - "I don't want to feel stupid" learner
  - Regardless of which type, people want to have purpose and be able to do something with what they are learning.

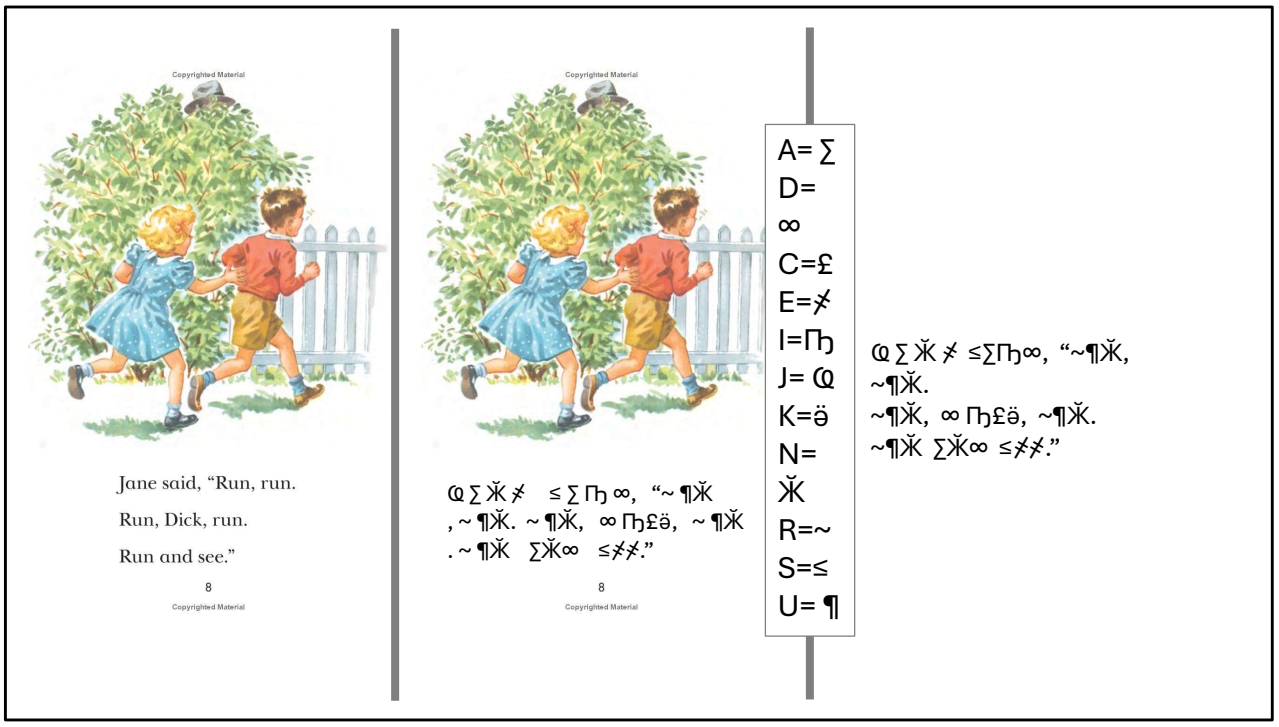
- **What is their current skill level?**
- One of the things you need to consider when you are finding out about your learners is their current sk level and how much of an effort are you asking your learners to make. (steep or gradual). While you may have some control over the difficulty of the material, much of the outcome is determined by the learners' ability.

- A more beginner audience needs a lot of structure and guidance, and a more advanced audience neec more autonomy and resources that they can choose to access as needed.

- **How are your learners different from you?**
- Questions to ask your learners
- Before:
- Why are you learning this?
- What are the biggest hassles or challenges you experience (in relation to the topic)?
- What are some example of when you have problem (as it relates to this topic)?

- After:
- What was the hardest thing for you to learn?

- What were the easy parts?
- What could make it easier for you?
- How do you use the information now?
- What do you wish you would have known when you first started?
- Can you walk me through it?

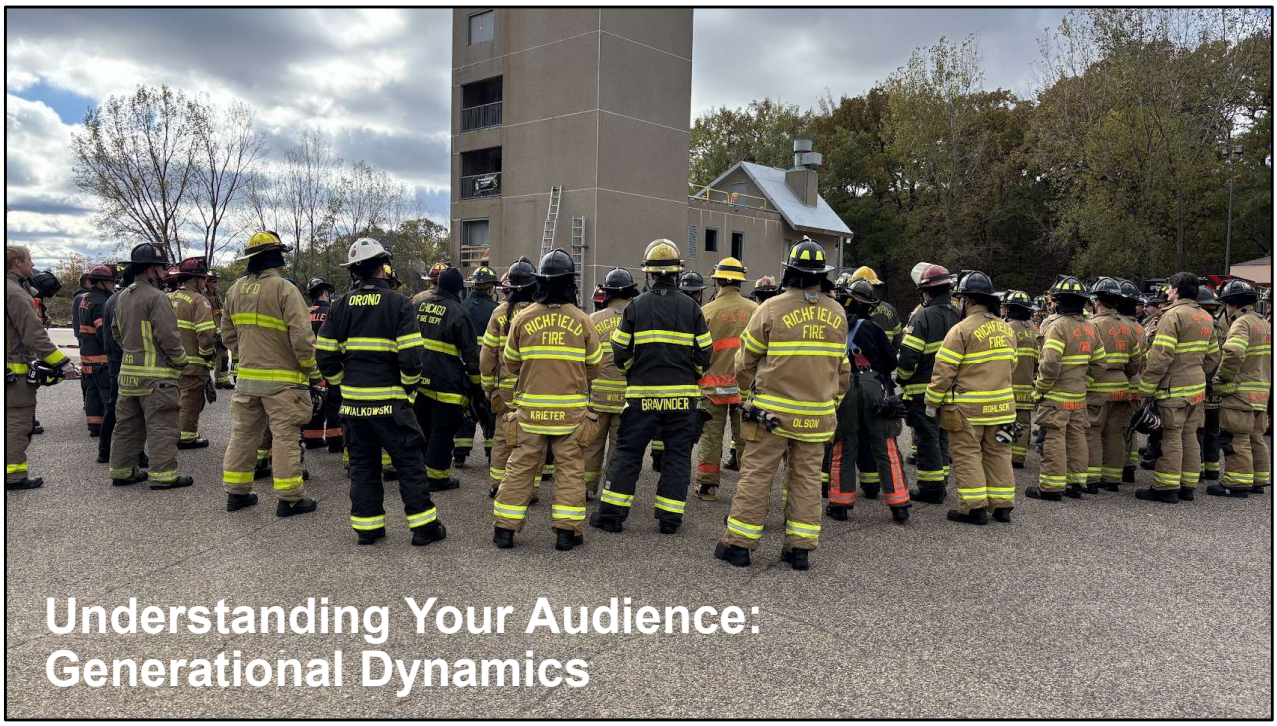


- **Illustration of meeting learners where they are**

- Step 1: (right side) group of teachers are given only symbols and a key for the symbols to teach another group how to read.

- Step 2: (middle) group of teachers are given a picture, symbols, and a key for the symbols to teach another group how to read.

- Step 3: (left side) group of teachers are given a picture and words in English to teach another group how to read.



Current fire service workforce spans 4 generations — each shaped by different cultural, technological, and educational contexts.

Overview of generational tendencies (*without stereotyping — these are tendencies, not rules*):

- **Baby Boomers** (loyalty, structured learning, respect for hierarchy, patience for longer instruction).
- **Gen X** (independence, efficiency, skepticism of authority, "just give me what I need").
- **Millennials** (collaboration, technology-comfortable, purpose-driven, "why does this matter?").
- **Gen Z** (digital-first, short-form content preference, mental health awareness, desire for authenticity). How these differences show up in the classroom: attention spans, preferred feedback styles, technology expectations, communication norms.

The generational comparison table from the Transformational article (Baby Boomers/Gen X vs. Millennials/Gen Z values, learning styles, leadership expectations) can be used as a discussion artifact — not to stereotype, but to illustrate *why* disorienting dilemmas happen when generations with different frames of reference work together.

The article's argument about generational shifts directly feeds the generational considerations content in Module 4. Reference the fire service isn't just teaching across generations — it's asking people with fundamentally different frames of reference to transform together. This reframes "generational differences" from a communication challenge into a *transformative learning opportunity*.

Background:

- The current fire service workforce spans four generations, each shaped by different cultural, technological, and educational contexts. Understanding generational tendencies (without stereotyping) helps instructors design with enough variety and flexibility to reach diverse learners.

Application:

- Module 4 provides focused treatment. Participants explore generational profiles, examine how differences manifest in the classroom, and practice adapting instruction through a gallery walk activity.

Purpose

- Address myths and realities without stereotyping.

Topics

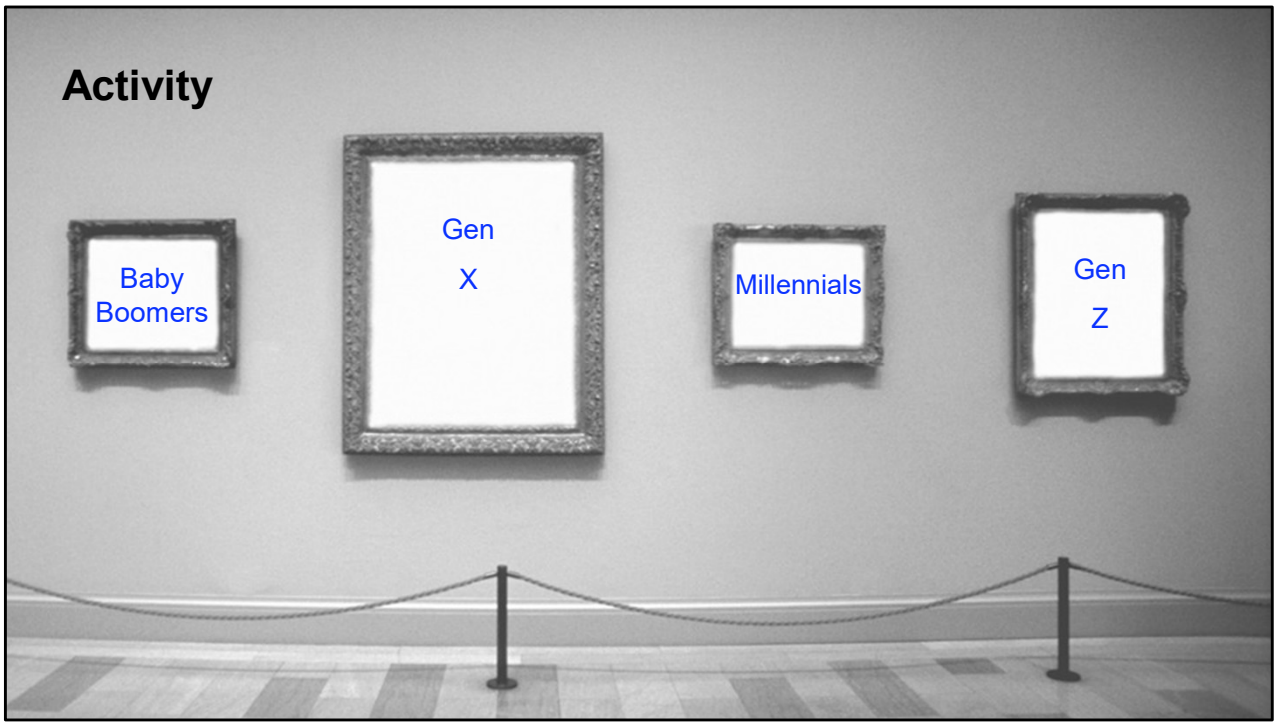
- Experience vs. age
- Technology comfort
- Motivation differences
- Communication preferences
- Avoiding “generational blame”

Integrated Theory

- Maslow → different needs emphasized by different learners
- Transformative Learning → challenge generational assumptions
- Thorndike → readiness varies by experience, not age

Activity

- Participants identify one generational assumption they hold and reframe it.



Activity: "Generational Gallery Walk" (10 min) — 4 stations around the room (or a quadrant sectioned paper), each with a generational profile and teaching scenario. Small groups rotate (2–3 min per station) and discuss: "How would you adapt your instruction for this learner?" Groups report key adaptations. Key takeaway: *"Effective instruction doesn't mean choosing ONE generation's preference — it means designing with enough variety and flexibility to reach across generations."*

Gallery Walk logistics: Pre-set the stations. Have clear instructions posted at each station. Use a timer — 2.5 minutes per station keeps energy high.

Watch for: Participants who dismiss generational considerations as "stereotyping." Acknowledge the concern: "These are tendencies, not labels. The point isn't to pigeonhole — it's to design with range."

Station 1 — Baby Boomers (Born ~1946–1964)

- **Profile tendencies:**
- Value experience, loyalty, and professionalism
- Prefer clear expectations and structured learning
- Appreciate respect for expertise and lived experience

Scenario: You're teaching a skills refresher to a mixed-experience crew. A Boomer firefighter expresses frustration with "new ways of doing things" and wants to stick with the method they've used for 25 years.

Prompt: "How would you adapt your instruction to honor experience while still moving them toward updated practice?"

Station 2 — Generation X (Born ~1965–1980)

- **Profile tendencies:**
- Independent, pragmatic, efficiency-focused
- Prefer self-directed tasks and minimal micromanagement
- Appreciate relevance and time-respectful instruction

Scenario: You're introducing a new reporting system. A Gen X learner wants to skip the walkthrough and "just try it" but keeps missing key steps.

Prompt: "How would you design instruction that supports autonomy while ensuring accuracy?"

Station 3 — Millennials (Born ~1981–1996)

- **Profile tendencies:**
- Collaborative, feedback-oriented, tech-comfortable
- Value purpose, transparency, and coaching-style leadership
- Prefer interactive, multimodal learning

Scenario: You're facilitating a scenario-based drill. A Millennial learner asks for more context: "Why are we doing it this way? What's the bigger picture?"

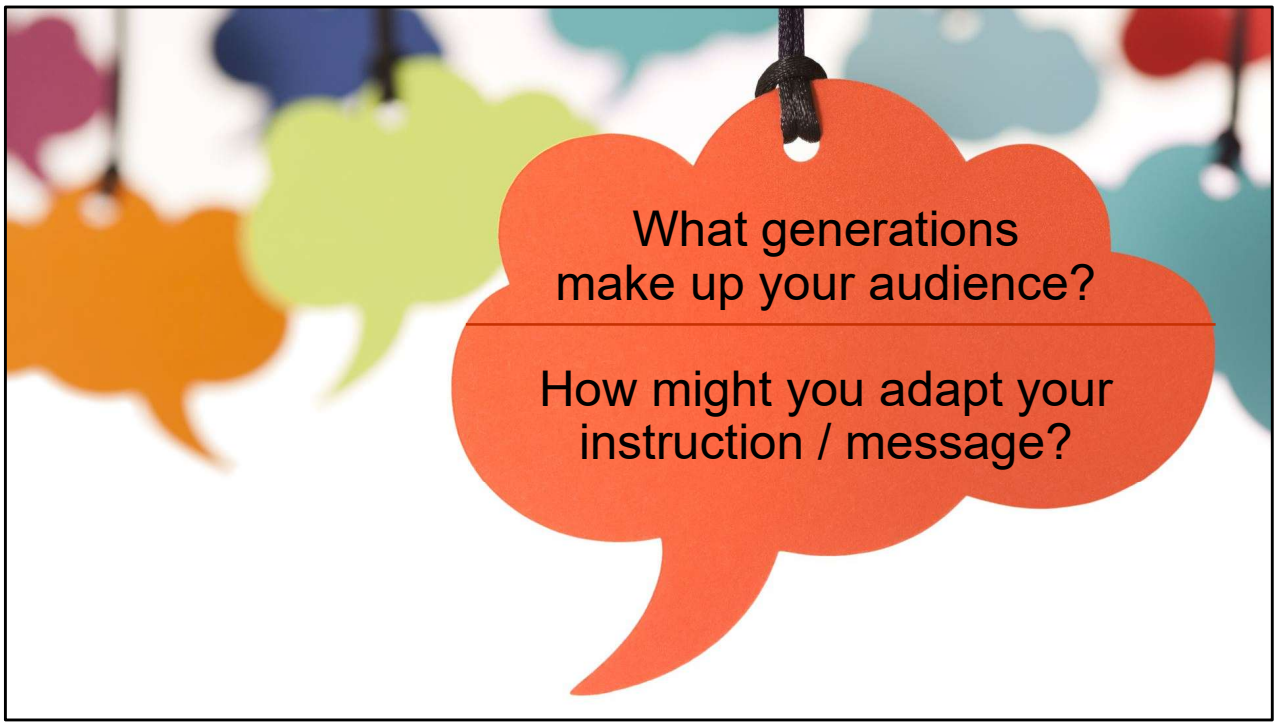
Prompt: "How would you adapt your instruction to connect the task to meaning and encourage engagement?"

Station 4 — Generation Z (Born ~1997–2012)

- **Profile tendencies:**
- Digital-native, visual, rapid information processors
- Value psychological safety and inclusive environments
- Prefer hands-on, tech-integrated, bite-sized learning

Scenario: You're teaching a complex procedure. A Gen Z learner is hesitant to speak up and instead quietly Googles alternative explanations on their phone.

Prompt: "How would you adapt your instruction to support confidence, clarity, and appropriate tech use?"


What generations make up your audience?
How might you adapt your instruction / message?

1. Knowledge Gap

- **What it is:** Missing or incomplete information. **How it shows up:**
  - Learners haven't been taught the content.
  - They misunderstand key concepts.
  - They lack foundational knowledge needed for advanced skills.
- **Instructor moves:** Teach, clarify, chunk, scaffold.

Additional notes:

- Information is the equipment your learners need to have in order to perform. Having information doesn't accomplish anything by itself. Something is accomplished when the learning USES the information to do things. You want your learners to have the right supplies for their journey.

- What do you want learners to DO with the information you are giving them? Having the information without knowing how and when to use it is like having a really expensive camera, but not having the ability to use it.

2. Skills Gap

- **What it is:** Learners know the concept but cannot perform it reliably. **How it shows up:**
  - Performance breaks down under pressure.
  - Steps are skipped or out of order.
  - Learners need more reps, feedback, or modeling.
- **Instructor moves:** Demonstrate, coach, practice, simulate.

Additional notes:

Having a knowledge is different than having the ability (skill) to do it. To determine if something is a skill gap rather than a knowledge gap, you need to ask if it is reasonable to think that someone can be proficient without practicing.

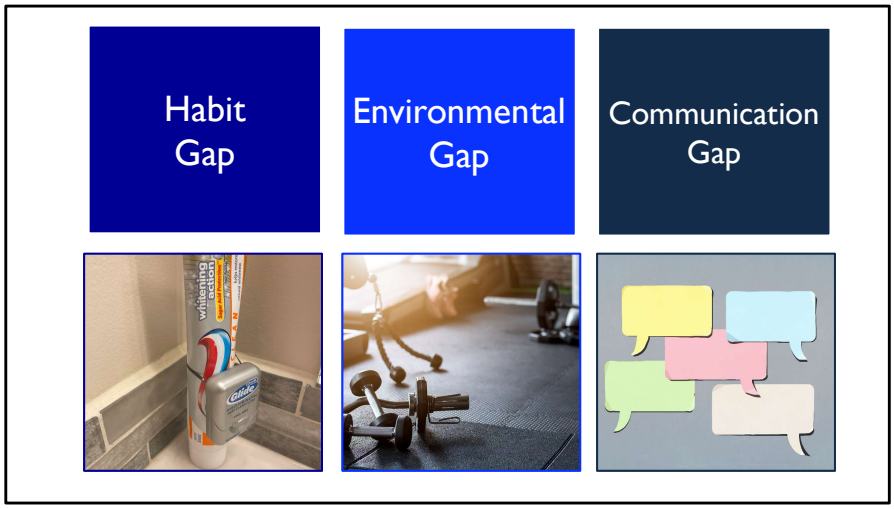
3. Motivation Gap

- **What it is:** Learners don't see the relevance, value, or payoff. **How it shows up:**
  - Low engagement.
  - "Why do we have to do this?"
  - Resistance to new methods.
- **Instructor moves:** Connect to purpose, autonomy, mastery, identity, and real-world impact.

Additional notes:

When someone has the skill and ability, but chooses not to do it. (Example: Flossing) there are multiple reasons for the motivational gaps: no buy-in, anxiety about change, destination doesn't make sense, distraction, lack of interest, no understanding of the big picture. (Unlearning can be part of this gap)

- Reference: Design for How People Learn (Julie Dirksen)



4. Habit Gap

- **What it is:** Old routines override new learning. **How it shows up:**
  - Learners revert to familiar behaviors.
  - Automatic responses conflict with new expectations.
- **Instructor moves:** Repetition, cues, habit replacement, deliberate practice.

Additional Notes: people have the knowledge, skills, and motivation, but lack the habit. Giving positive feedback to employees, you know it's important, but you are not in the habit to do so. A large portion of our days are habit-driven. Unless we make a conscious decision to rework our habitual schedule we can't implement the new thing. (IE working out) Putting the elliptical in the bedroom will be more likely to be worked into the habit than if it's in the basement.

5. Environmental Gap

- **What it is:** The system makes the desired behavior difficult or impossible. **How it shows up:**
  - No time, tools, or support.
  - Conflicting priorities.
  - Policies or culture that reinforce the old way.
- **Instructor moves:** Adjust environment, remove barriers, advocate for structural support.

Additional Notes: If you want someone to change a behavior, does the process support it? Are there materials, references, and job aids to support the learner when they return to their

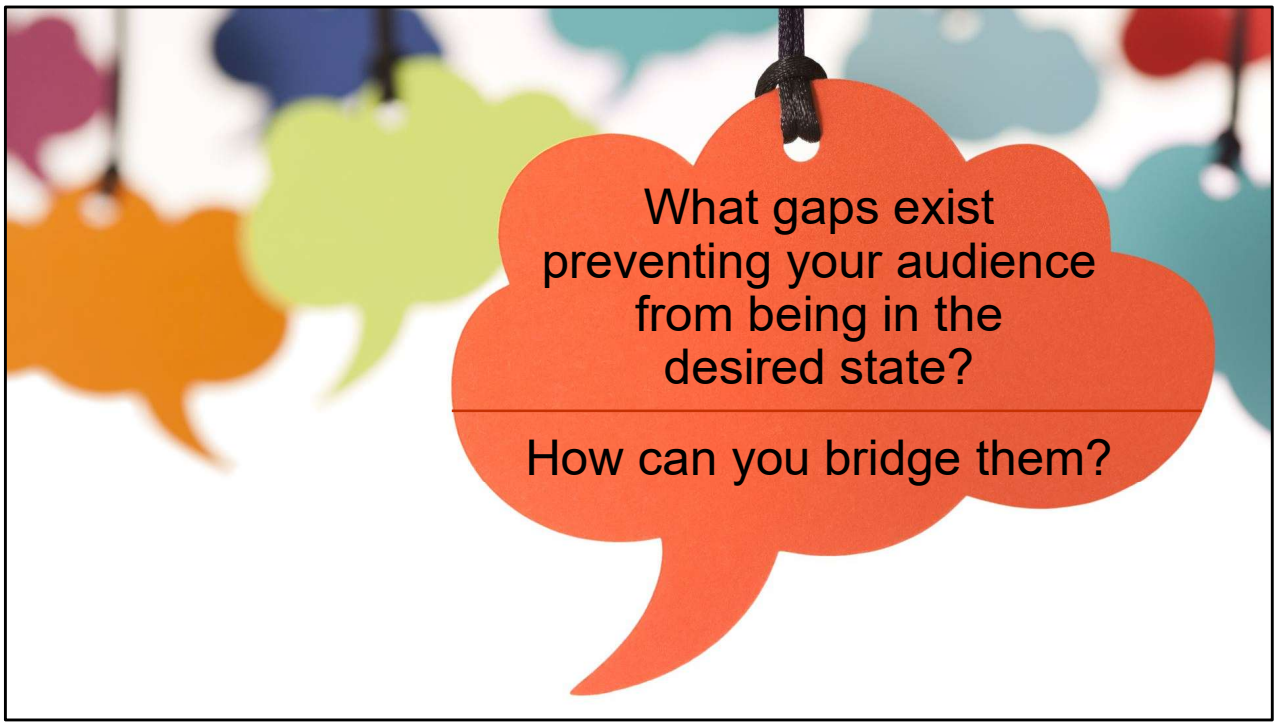
work environment? Do they have everything in terms of materials, resources, and technology? (Ie – new IT process – doesn't anyone remember what steps comes next? I know we learned it in training…) Are people being incentivized or rewarded for implementing the change or is it based on their previous benchmarks? Changes take time and may involve a decrease in success in the implementation stage, thus dropping measurables) Is the change reinforced over time or is it something that is rolled out once. (Think forgetting chart)

6. Communication Gap/ Direction of Leadership gap

- **What it is:** The message isn't clear, consistent, or aligned with learner needs. **How it shows up:**
  - Learners misunderstand expectations.
  - Instructions are vague or overly complex.
  - Mixed messages from different instructors.
- **Instructor moves:** Simplify, clarify, align, check for understanding.

Additional Notes: Sometimes the failure to perform is due to bad/conflicting directions/instructions/expectations.

Reference: Design for How People Learn (Julie Dirksen)


What gaps exist preventing your audience from being in the desired state?
How can you bridge them?

- We have a framework for stories – we know how they work (parts of a story, problem/resolution/logical flow)

- A really well told story can stick with us for years, even if we've only heard it once.

- Stories usually create suspense – whenever someone starts telling you a story, there's an implied puzzle that you start trying to solve. Is it going to be funny? Surprising? Sad?

- Generally people start clicking their connections to a person in a story or the story itself, (schema)

- Stories have an emotional resonance that can help us form opinions and make decisions. You don't just want people to learn things—you want them to be able to act on what they learn, and emotional context helps them do that.

- Recall is stronger with storytelling hooks.

Integrating Storytelling

The neuroscience of story: narrative activates more brain regions than facts alone — motor cortex, sensory cortex, frontal cortex all engage when we hear a well-told story.

Fire service storytelling traditions are not just cultural artifacts — they are **instructional assets**.

Story structure for instruction:

- **Hook** (set the scene, create tension) → **Tension** (the challenge, the unexpected) → **Resolution** (what happened, what was learned) → **Learning Point** (the instructional takeaway — "Here's why this story matters for today's topic").

Types of instructional stories:

- personal experience ("Let me tell you about a call...")
- case study (structured analysis of an incident)
- historical event (significant fires with instructional lessons)
- "what if" scenario (hypothetical that challenges assumptions).

When to use story: opening hooks, illustrating abstract concepts, making safety personal, transitioning between modules.

Caution: stories need a learning purpose, not just entertainment. Ask yourself: "What do I want learners to take away from this story?"

Background:

Storytelling functions as a cognitive anchoring tool. Neuroscience research demonstrates that narrative activates more brain regions than factual information alone, improving retention and emotional connection. The fire service has rich storytelling traditions that can be harnessed as instructional assets.

Application:

- Threaded throughout the entire workshop. Fire service stories and analogies serve as opening hooks, case-based teaching tools, and emotional connectors. Module 5 provides focused treatment on how to structure instructional stories with purpose.

Storytelling is one of the most powerful instructional tools in adult learning. It activates emotion, enhances memory, supports meaning-making, and helps learners connect abstract concepts to real-world application. In emergency-services education, storytelling becomes even more essential because it mirrors the way responders learn, recall, and make decisions under pressure.

Why Storytelling Works for Adult Learners

Adults learn through experience and meaning-making

- Knowles' andragogy emphasizes that adults:
  – draw heavily on prior experience
  – need relevance
  – learn best when content connects to real-world application
- **Storytelling provides the bridge between concept and lived experience.**

Stories reduce cognitive load and increase retention

- Cognitive Load Theory shows that information is easier to process when it is:
  – chunked
  – contextualized

  – emotionally meaningful

- Stories naturally do all three. They create a schema that helps learners organize new information.

Stories activate dual-coding (verbal + visual channels)

- Dual-coding theory demonstrates that memory improves when learners encode information through both:
  – verbal descriptions
  – mental imagery
- Stories automatically trigger imagery, strengthening long-term retention.

Stories increase motivation and engagement

- Self-Determination Theory (SDT) shows that adults are more motivated when learning supports:
  – autonomy
  – competence
  – relatedness
- Stories—especially those involving real people, challenges, and decisions—enhance relatedness and emotional connection.

Stories support transformative learning

- Mezirow's Transformative Learning Theory emphasizes that adults change their thinking when they:
  – encounter disorienting dilemmas
  – reflect on assumptions
  – engage in dialogue
- Stories—especially those involving mistakes, near misses, or ethical dilemmas—create safe "disorienting moments" that prompt reflection.

Best Practices for Storytelling in Adult Education

- **Make the story purposeful, not decorative**

  - Every story must directly support the learning objective. Avoid “war stories” that entertain but don’t teach.

- **Best practice:** State the purpose before or after the story:
  - “I’m sharing this because it illustrates how cognitive overload affects decision-making.”

- **Keep stories concise and structured**
  - Use a simple structure:
  - **Setup** (context)
  - **Conflict** (challenge or decision point)
  - **Resolution** (what happened)
  - **Meaning** (what we learned)
- This mirrors narrative research showing that structured stories improve recall.

- **Use emotionally resonant but psychologically safe stories**
- Stories should evoke:
  - curiosity
  - empathy
  - reflection
  - …but avoid graphic trauma, gore, or sensationalism—especially in emergency-services settings.
- **Supported by:** Trauma-informed teaching literature and psychological safety research.

- **Use stories that reflect the learners’ world**
- Adults engage more deeply when stories:
  - use familiar environments
  - reflect their roles
  - include realistic decision points
  - avoid stereotypes
- This is especially important in emergency services, where authenticity is everything.

- **Invite learner stories (but structure the sharing)**
- Peer storytelling:
  – builds community
  – validates experience
  – deepens learning
- But it must be facilitated with boundaries to avoid derailment or retraumatization.

Using Storytelling in Emergency-Services Education

- Emergency-services learners (fire, EMS, law enforcement, dispatch) rely heavily on narrative memory. They recall:
  – calls
  – decisions
  – mistakes
  – successes
  – near misses
- This makes storytelling a natural and powerful instructional tool.

Stories build judgment, not just knowledge

- Emergency-services work is full of gray areas. Stories help learners practice:
  – situational awareness
  – risk assessment
  – ethical decision-making
  – prioritization
  – communication under pressure
- This aligns with research on scenario-based and experiential learning.

Stories support psychological safety and culture change

- When instructors share stories that include:
  – mistakes
  – uncertainty
  – lessons learned

  - …it normalizes vulnerability and continuous improvement.
- This is essential in a culture that historically punished error.

Stories help encode high-risk, low-frequency events

- Events like:
  - maydays
  - pediatric arrests
  - structural collapse
  - wildland entrapments
- …are rare but critical. Stories help learners mentally rehearse them.

Stories can reduce stigma around wellness and mental health

- Sharing stories about:
  - stress
  - burnout
  - emotional load
  - resilience strategies
- …helps normalize help-seeking and supports organizational wellness.

Stories make policy and protocol meaningful

- Instead of saying: “Follow this SOG.”
- You can say: “Let me tell you about the call that led us to change this SOG.”
- This increases buy-in and retention.

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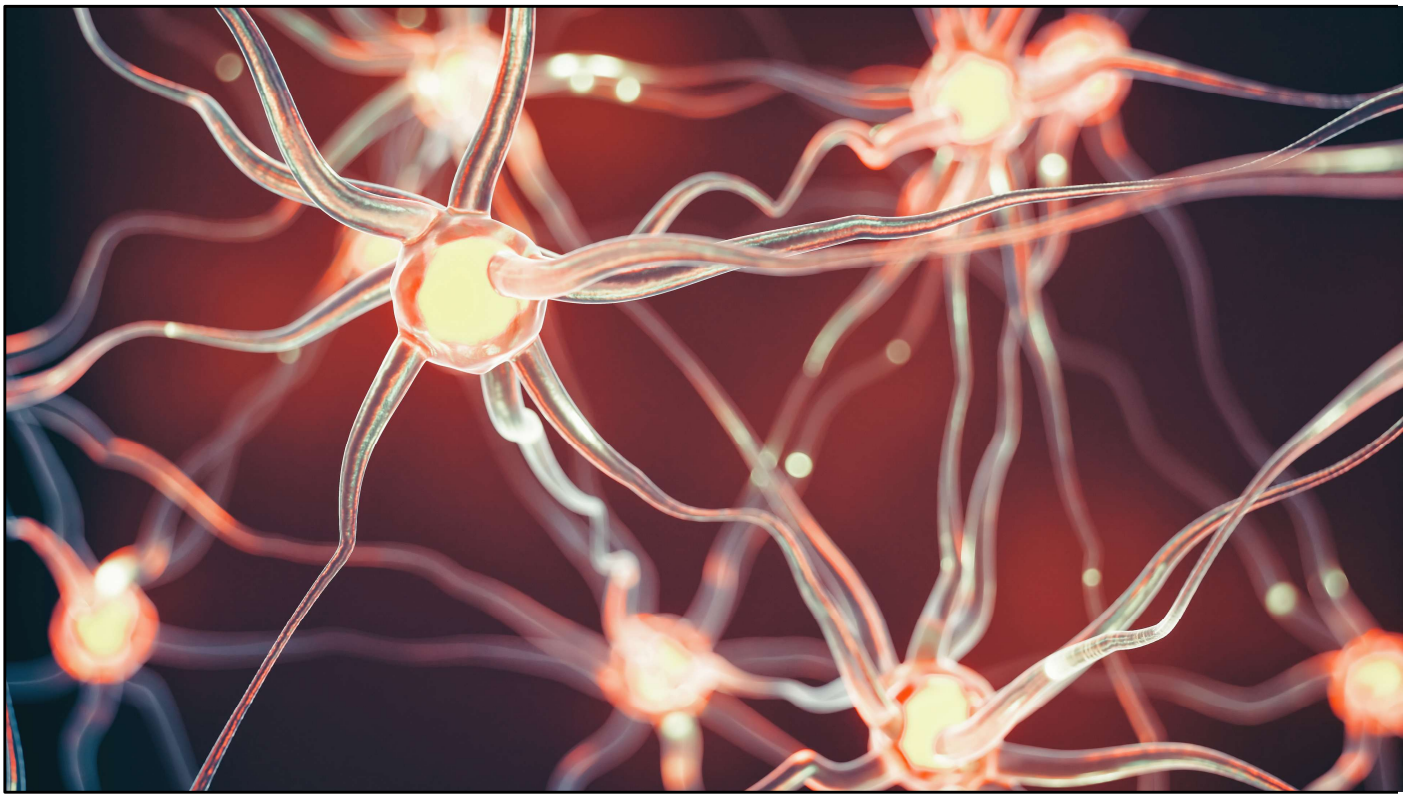


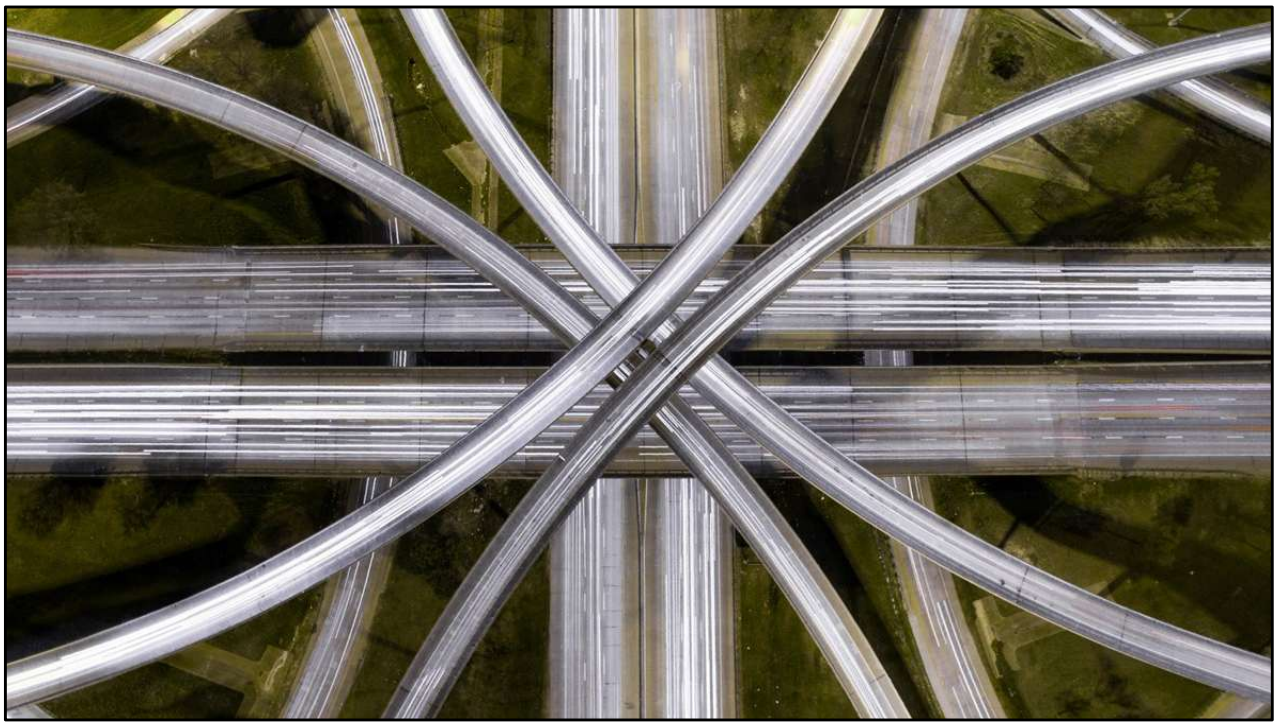
- Neural pathways are the connections between neurons that light up when you think of something for the first time, and the connections form a pattern in your brain. Your brain has now attached meaning to that specific pattern.

- There are many technical types of pathways with big names, but for understanding how the brain impacts behavior, all we need to know is that there are dominant (well-formed) pathways and lesser (fragile new pathways).

- When your brain processes a new thought, it starts off as a lesser pathway. Like a baby trying to walk for the first time (neurons connecting from the brain to muscles, for balance etc.) and battling a bit. But the more you do it over and over again in the same way, the stronger and more dominant the neural pathway becomes. And now, today, as an adult, you don't need to think about walking anymore, it's a well-formed dominant neural pathway in your brain.

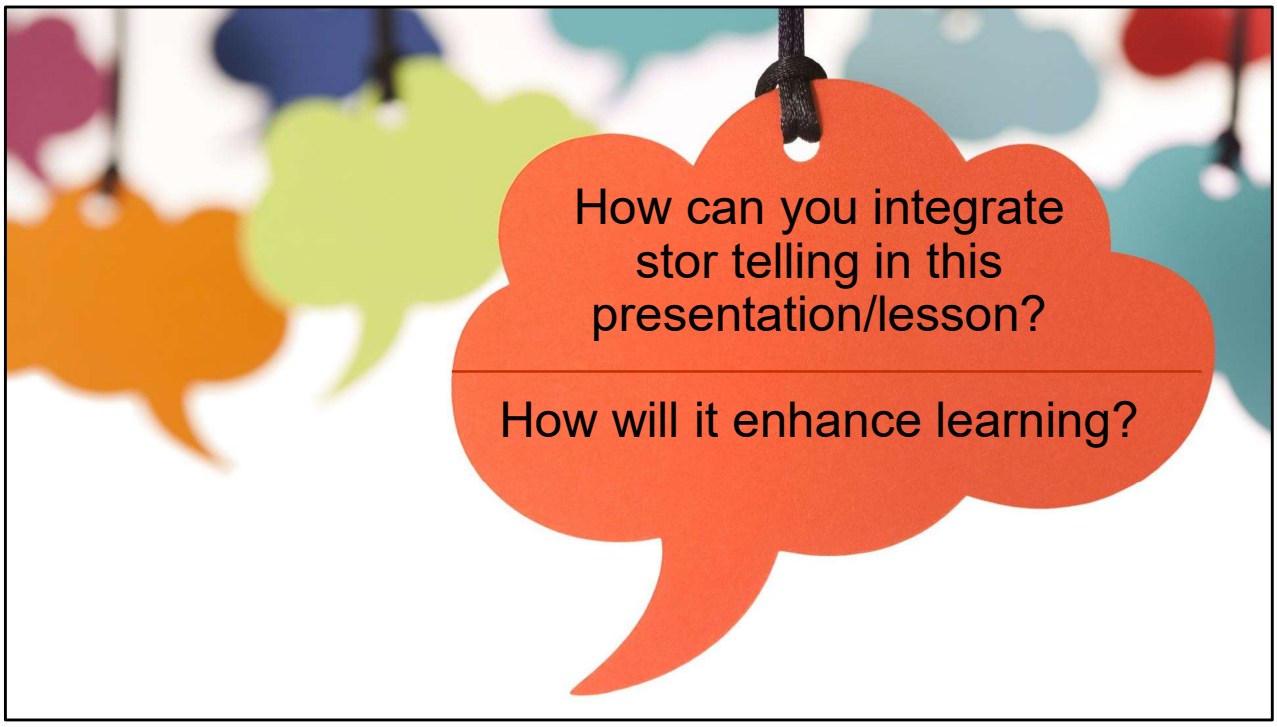
- https://lifexchangesolutions.com/neural-pathways/

- Oftentimes, concepts that are on a superhighway for the instructor (due to their experiences or occupation) have no place to land for the learners – so they end up on a dead-end road that will likely not be traveled.



- Illustration on storytelling:

- Smoke and fire is like a bathtub
- You (your parents) pull the facet and water goes straight down, filling the entire bottom of the bathtub and then starts getting deeper. Smoke and fire is the same, but upside down. As smoke rises, it fills the space it's enclosed in (this is why smoke alarms are on the ceiling) and then it gets deeper, but because it's upside down, deeper is dropping from the celling to the floor. (This is why you are told to "crawl low under smoke")


How can you integrate stor telling in this presentation/lesson?
How will it enhance learning?

- How can you integrate engagement opportunities into you presentation?
- This can be discussion, reflection, movement, application, etc.

- Define how this will enhance learning.

HANDS-ON WORK SESSION #3

Participants redesign a section of their presentation incorporating: at least one generational adaptation strategy, discussion / reflection opportunity, and/or new engagement strategy from today's content.

Facilitator circulates with targeted coaching.

Encourage participants to share their changes with a table partner. *"Show someone what you changed and explain why."*

Transition to Module 5: *"You know WHO you're teaching. Now let's sharpen HOW — visual design, storytelling, and delivery techniques that bring it all together."*

Module 5 Learning Objectives

- Apply visual design principles (billboard test, one-idea-per-slide, intentional white space) to revise slides for clarity and impact.
- Construct an instructional story using the hook–tension–resolution–learning point structure.
- Demonstrate at least two delivery techniques (strategic pause, Bloom's-aligned questioning) that enhance learner engagement.

Methodology Integration — Module 5

- **Cognitive Load Theory:** Applied to visual design — the practical extension of Module 3's theory
- **Storytelling:** Primary — taught as an instructional method with structure and purpose
- **Experiential Learning:** Work Session #4 is active experimentation
- **Accessibility:** Visual design principles reinforce accessible slide design

Apply CLT to visual design. The **"billboard test"** — if you can't read it at highway speed, it's too much text.

Principles: *one idea per slide* (split content across multiple slides rather than cramming)

high-quality images over clipart (professional photography, relevant diagrams — no cartoon firefighters)

consistent formatting (same fonts, colors, and layout throughout)

intentional use of white space (white space is not wasted space — it reduces cognitive load)

animation with purpose (build sequences to control information flow, not spinning text for entertainment).

Before/after makeover examples using fire service content: a ventilation procedures slide with 12 bullet points and a stock photo border vs. a redesigned version with one key concept, a compelling image, and speaker notes carrying the detail.

Typography: readable fonts (sans-serif for slides, minimum 24pt), hierarchy (title, subtitle, body), contrast (dark text on light background or vice versa). Color: accessible palettes, fire service brand consistency.

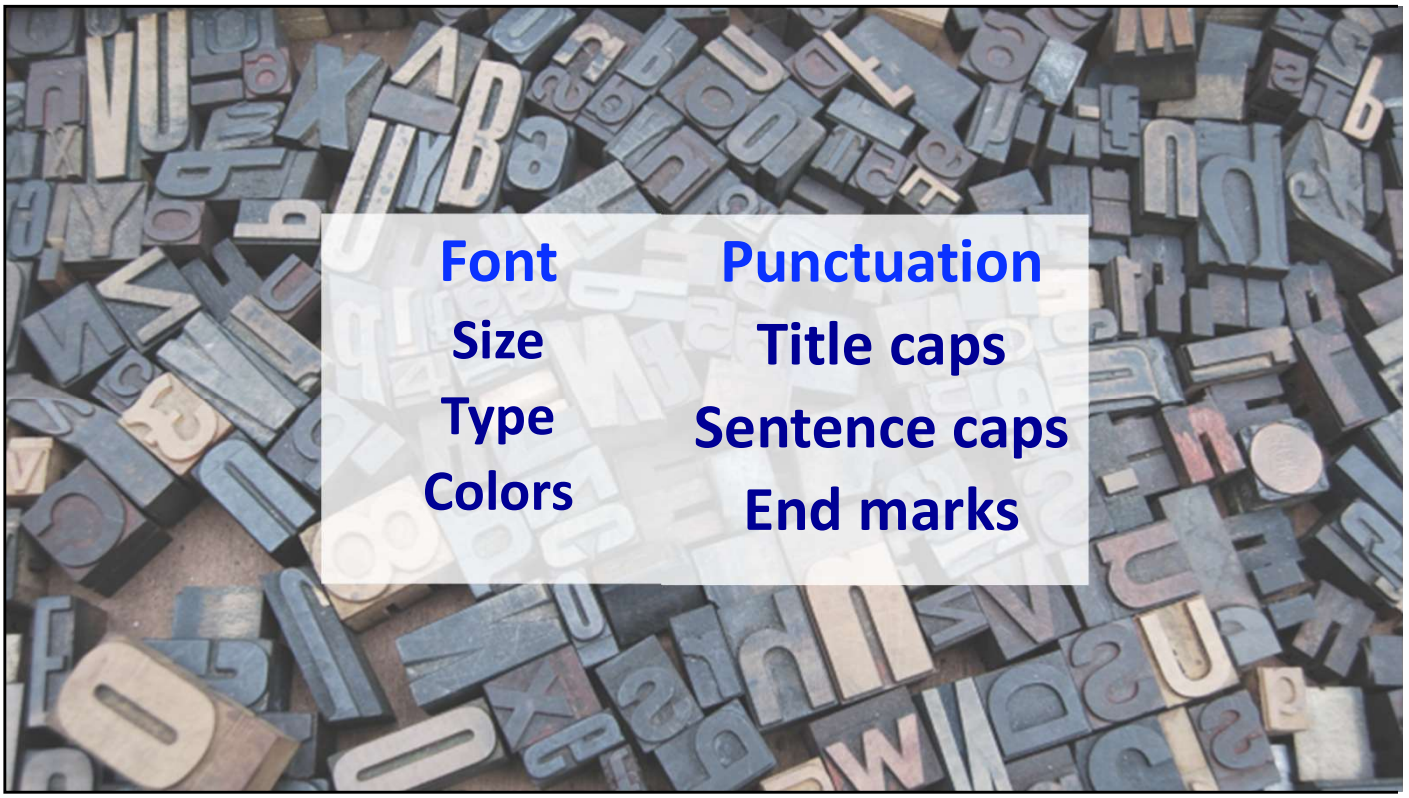
- Layout the things you want to talk about in your presentation in an outline format BEFORE starting to put all the words into the ppt slide deck.

- Use post it notes
- You can use the ppt deck – but list only as titles

- Then arrange the thoughts into sections that make sense for the learner

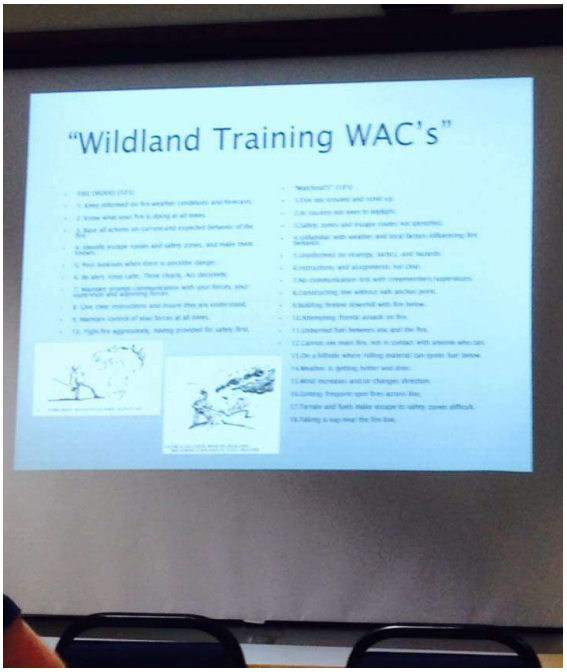
- You shouldn't couple ideas together on slides. This reduces the "spaghetti on the wall" approach – too many visual inputs and will also encourage the use of less words on the time. It will also provide the learners time to process what you are saying before you move to the next concept.

- Word limit - You can ignore small words like “a”, “if”, “or”, “of”, etc. If you have words on the slide – you WILL read them (whether you believe that to be true or not)
- If you cannot avoid abbreviations or acronyms, identify them early on.
- Utilize the concept of white space, allowing more room for the brain to process the information. On the screen.
- Don’t expand the suggested margins for text boxes or you’ll have difficulty when the words flow off the side of the screen in some venues.



- Punctuation: experts disagree. Some say include; others say not. My advice: just be consistent, I personally do not use periods because I don't use full sentences in my presentations.
- You can always tell when ppts are cobbled together or created over time when punctuation varies over the slides (period, no period, period, period, no period).
- Use find/find-replace to hep located and remove punctuation to stay consistent.
- Pick whether you will be using sentence caps (only first word capitalized) or title caps (all words capitalized) in your presentation. You can use Title caps in the headers and sentence caps in the body (like I do).

Cognitive Load



Connect cognitive load to safety and performance

- This is where the fire service leans in.
- You can explicitly link:
  – overloaded learners → poor retention → poor decisions on scene
  – clear instructional design → faster skill acquisition → safer operations
- Frame educational design as an operational readiness issue, not an academic exercise.

Cognitive load determines whether firefighters can *process*, *apply*, and *retain* what you teach

- Fire service learners operate in high-stress, high-stakes environments. Their working memory is already taxed by:
  – operational experience
  – fatigue and shift schedules

  - emotional load
  - multitasking
  - prior training habits (often content-heavy, slide-heavy, instructor-centered)
- Instructors must **intentionally manage cognitive load** so learning becomes durable and transferable.

Three Types of Cognitive Load in a Fire Service Context

1. Intrinsic Load — the complexity of the material itself

- Fire service content is inherently complex: fire behavior, EMS protocols, incident command, building construction, human factors.
  - Teach instructors to *chunk* complexity into digestible sequences.
  - Use the 7E or backward design models to scaffold learning.
  - Align objectives with the appropriate cognitive level (Bloom's).
- **Example:** Instead of teaching "ventilation" as one giant topic, break it into:
  - Why ventilation matters
  - Types of ventilation
  - Decision-making factors
  - Tactical application scenarios

2. Extraneous Load — the unnecessary stuff that gets in the way

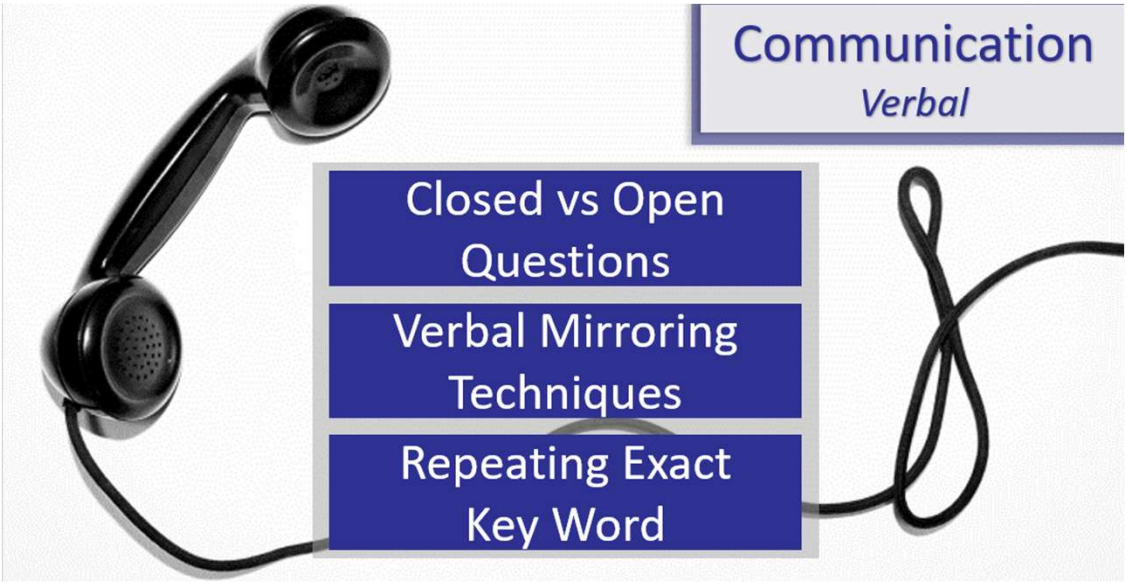
- This is where most fire service instruction unintentionally fails.
- Common extraneous load sources:
  - Dense slides
  - Reading bullet points aloud
  - Overlong lectures
  - Unclear directions
  - Poorly structured scenarios
  - Too many acronyms
  - "War stories" that don't connect to objectives
- **Application:**
  - Show instructors how to reduce clutter in slides and explanations.
  - Model clean visual design.
  - Teach them to remove anything that doesn't directly support the learning

objective.
  - Demonstrate how scenario design can either overload or focus learners.
- **Fire service example:** A slide with 12 bullet points about hose line selection creates extraneous load. A single image with a question — “Which line and why?” — reduces it.

3. Germane Load — the productive mental effort that builds expertise

- This is the load we *want* to increase.
- In the fire service, germane load is built through:
  - scenario-based learning
  - decision-making drills
  - reflection
  - peer discussion
  - hands-on practice
  - instructor prompts that require reasoning, not recall
- **Application:**
  - Teach instructors to design activities that deepen understanding.
  - Use Kolb’s experiential cycle to turn experience into learning.
  - Show how to create “desirable difficulties” that strengthen memory and judgment.

Layout Examples

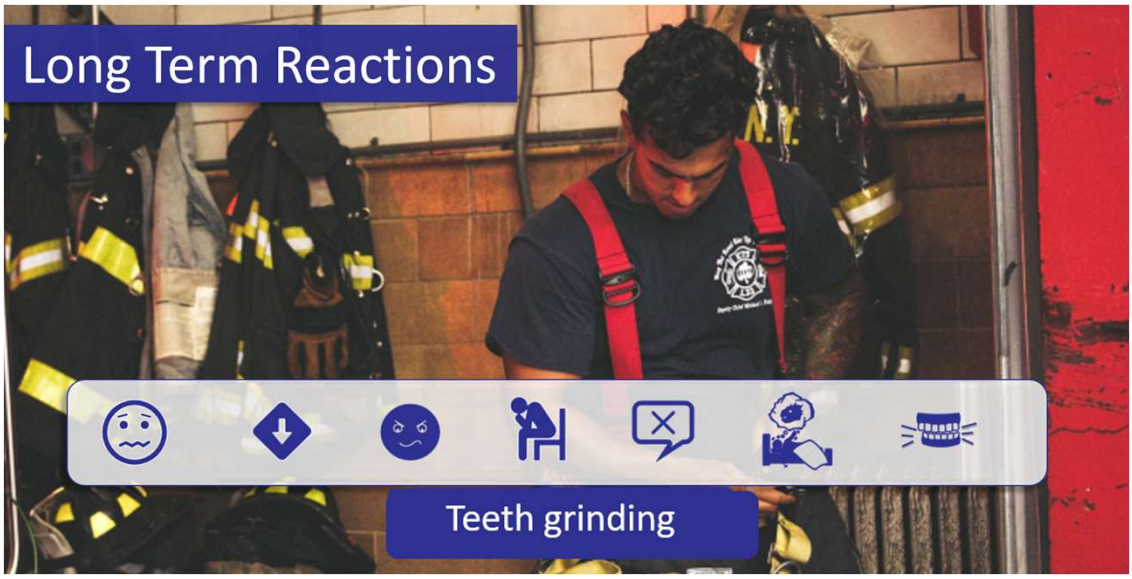


- Layout examples

- Use shapes/layers with consistent color schemes to create talking points. Choose one concept, not multiple for the presentation.

- It is okay to use color blocking – as long as the color scheme is consistent. That employs different layouts with shapes and colors, but the color “swatch” should remain consistent.

Layout Examples



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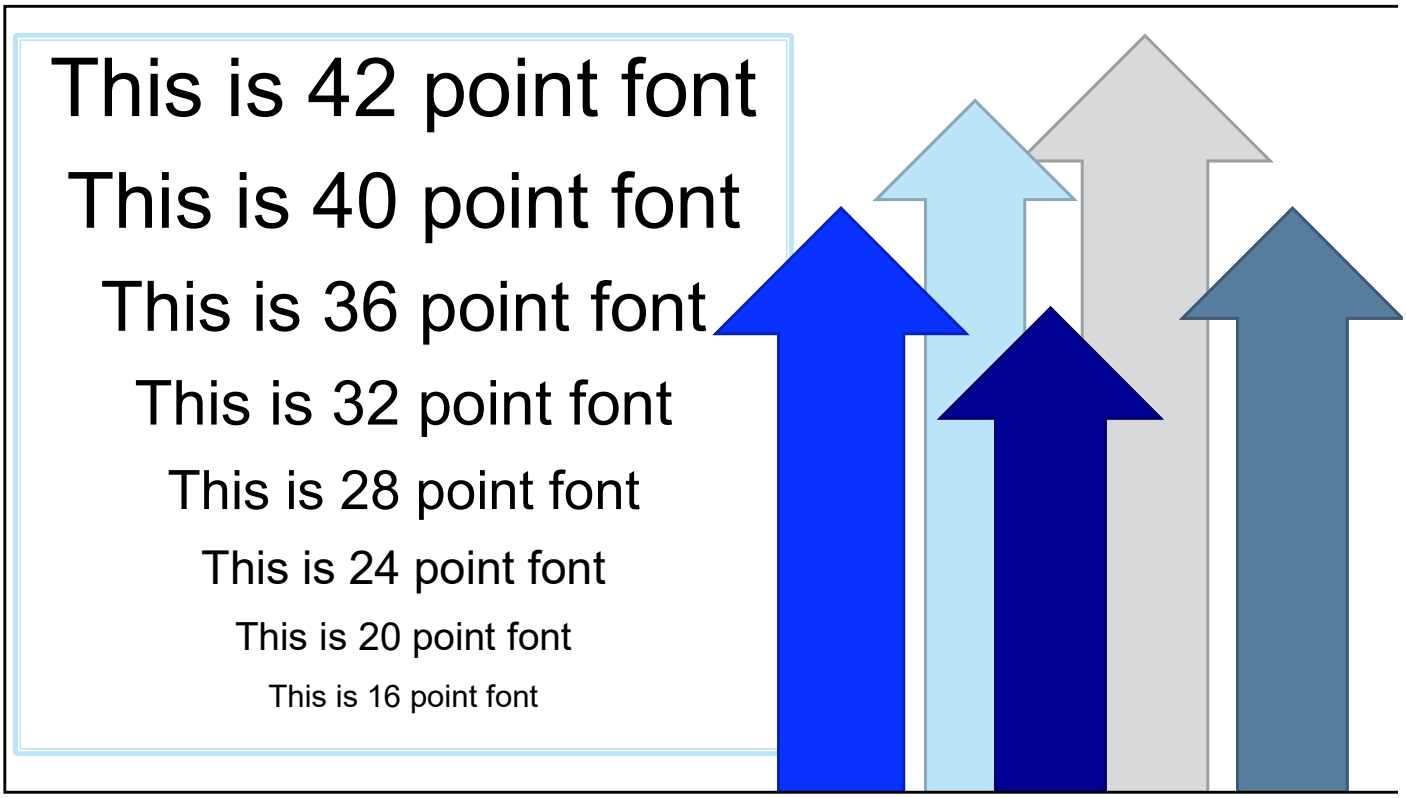
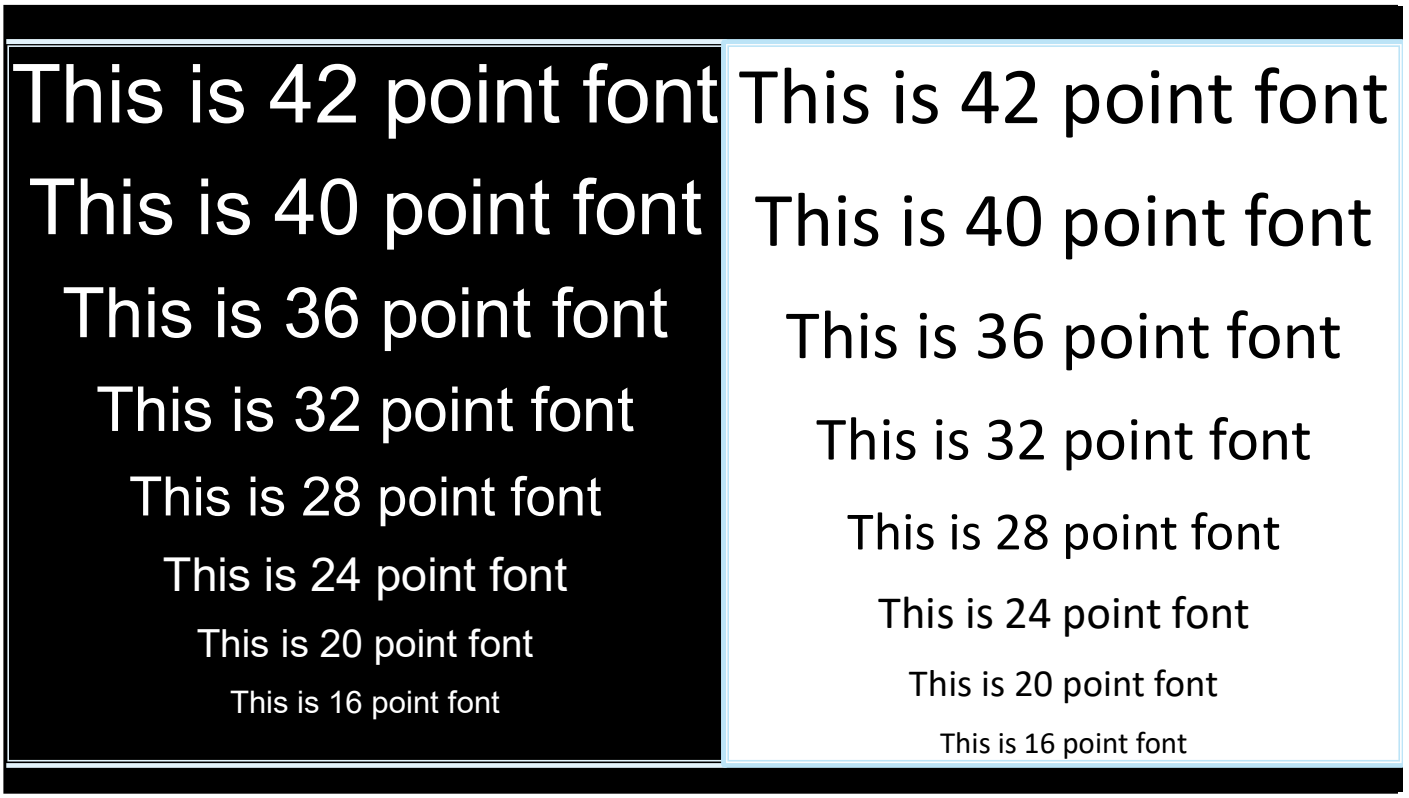
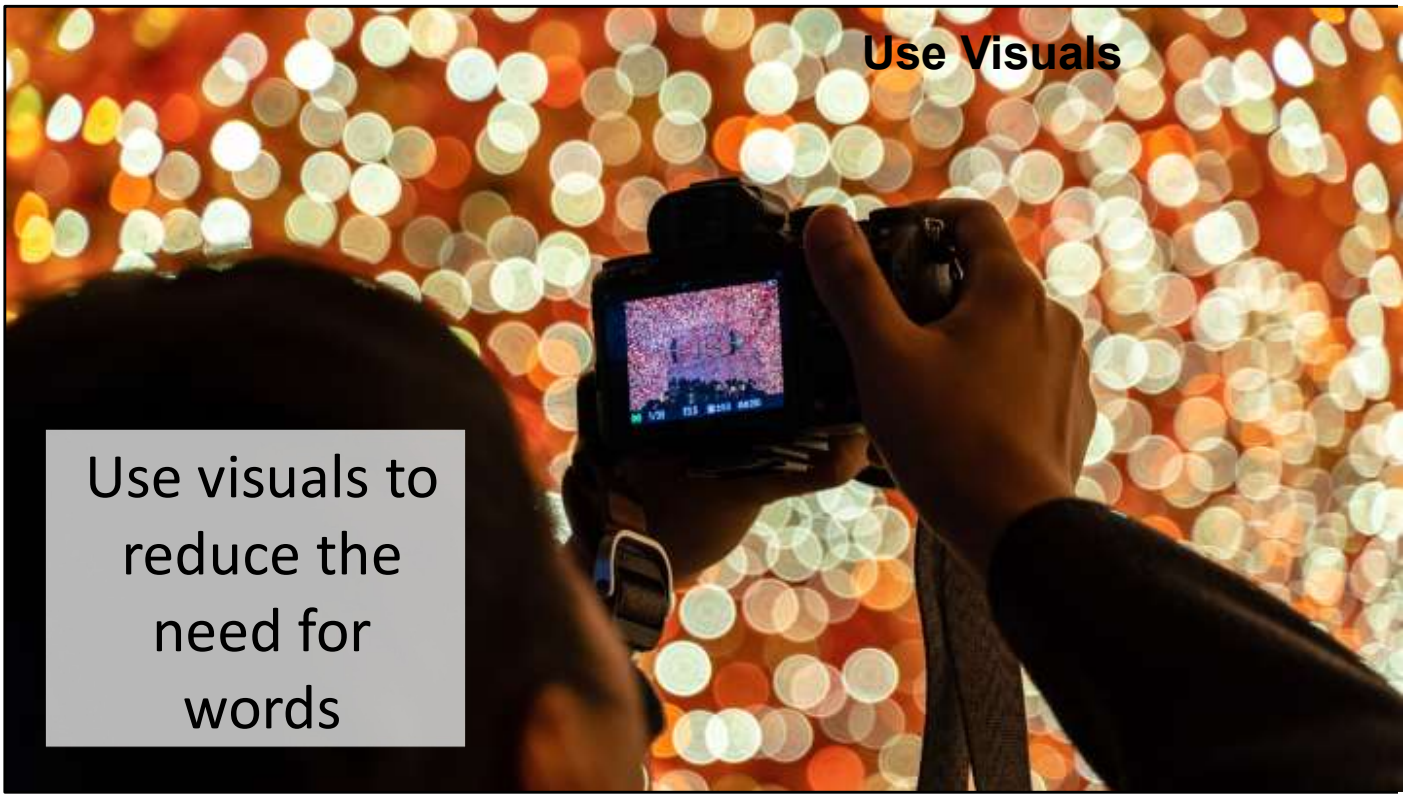


- While on the screen, find a font size that is comfortable to read. Keep it in their minds to compare to the darker slide later…

- White on dark came about because of advertising
- Takes longer to process the information, therefore taking time on the product that is being viewed.



- Compare the number selected two slides back to the current white on black combination. It should appear a little smaller – the message is that if you choose to use a dark background and light font, make sure you increase the font size. Remember though, that this combination (light on dark) takes more time to process for the learner and is fatiguing.



- There are visual and tactile ways to attract attention – visual aids, humor

- Things that you can taste, touch, hear, and smell also provide additional context that can act as memory triggers, and physical interaction can attract the learner's attention by providing a different way to interact with material. If the topic you are teaching has a hands-on component, then the learning should too.

- **Visuals**

- Visuals help distribute the load. Verbal and visual information seem to be processed differently by the brain, and as a result, effective use of both visual and verbal information helps keep learners from being overwhelmed by the material and gives them more ways to find the information again.

- **Humor**

- Research studies have showed that students were better able to recall and complete funny sentences as opposed to neutral sentences, probably because the humor focuses learners' attention or because the humorous versions were more memorable. HUMOR IS SUBJECTIVE. Not everyone finds the same things funny. That makes using humor for learning a somewhat tricky business.

- Think of reading – Left to Right, your brain processes like the old fashioned typewriter – you read left to right and when your brain processes the information on the right it resets the “ding” and will only view the picture one time. If you want the learner to look at the picture repeatedly (if the picture is more important than the words) put the picture on the left and the brain will scan it every time it resets to the right.

- If the image is places to the left, the brain will process it over and over as it reads each line of text.

- Consider the classroom layout and potential distractions that exist (windows, sightlines, doors, sun, etc.)

- Unless you are using slides or video projection you want the room lights at maximum intensity. Half your effectiveness with humor is realized because the audience can see you. The audience wants to see your face. They want to see your expressions. They want to see
  your body language. It is easier to establish a bond when the speaker and the audience can see each other which is one good reason to avoid reading your presentation from behind a lectern.

- As a professional presenter you must consider not
  only interaction, but safety and comfort parameters as well.

- If it is hard to hear, people won't listen.

- Uncomfortable people will not listen to you. The unwritten rule is that meeting rooms are always too hot or too cold so you'll have to do your best.

- The goal of all presentations and conferences is to teach, to learn and to interact with those around to establish results. The setup of the tables and chairs in the room can greatly influence the success of your meeting or presentation. Set up the chairs and tables for optimum participation and interaction to ensure the most success.
- have fewer chairs and table space available than the number of people you expect because estimates will always be high. Limited seating will force people to sit close together and in the front of the room, encouraging participation and attention.

Seat for least distraction--no audience member should have to cross more than six people to get to a seat.

Make people sit as close as possible to the front. Force them to front with reserved signs on back tables or keep chairs stacked until all front rows are full. Don't tip chairs up to reserve seats or force people forward because they may trip over the legs of the chairs.

- The occasional use of humor, whether peppered lightly throughout your presentations or used heavily in the occasional dedicated funny speech, can have a few benefits:
- Appropriate humor that's true to you let's your audience get a sense of your personality.
- People like to laugh. If your speech is funny, your audience will stay engaged.
- Good humor stands out and is memorable.

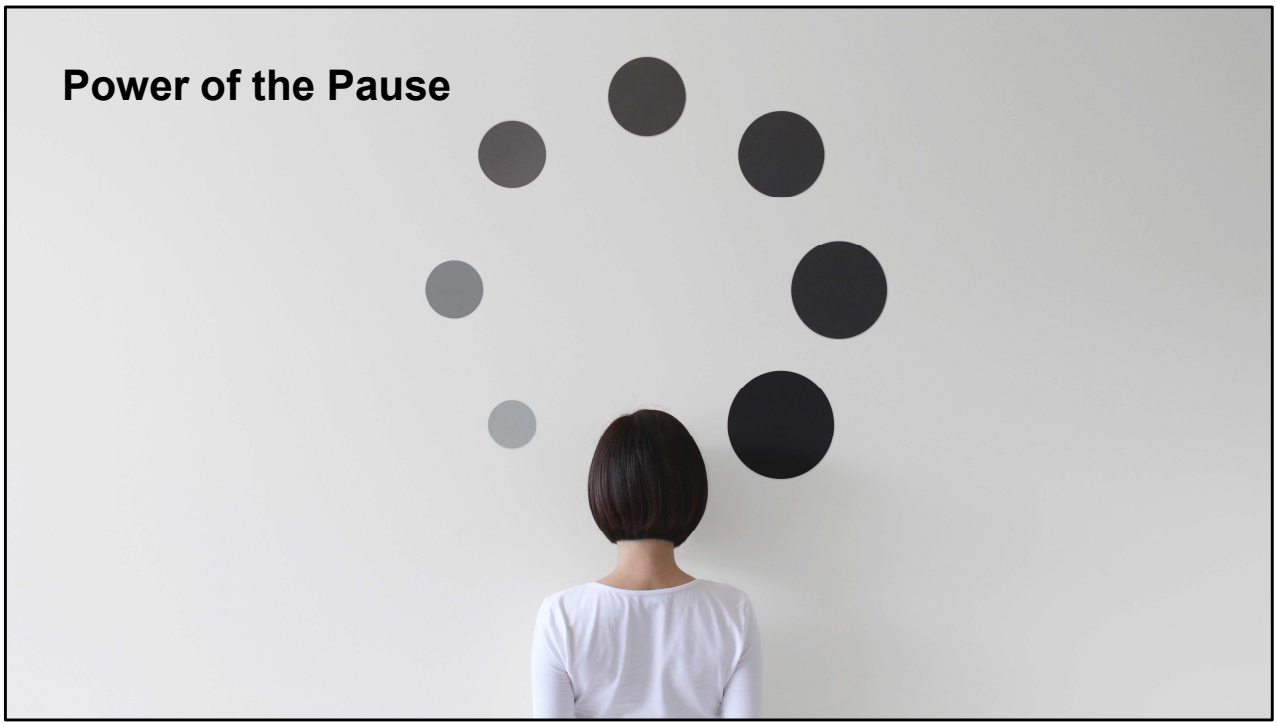
Body language and presence:

Voice: Pace variation (slow down for key points, speed up for energy)

- strategic pauses (pause after a key statement — let it land)
- volume for emphasis (drop your voice and the room leans in).

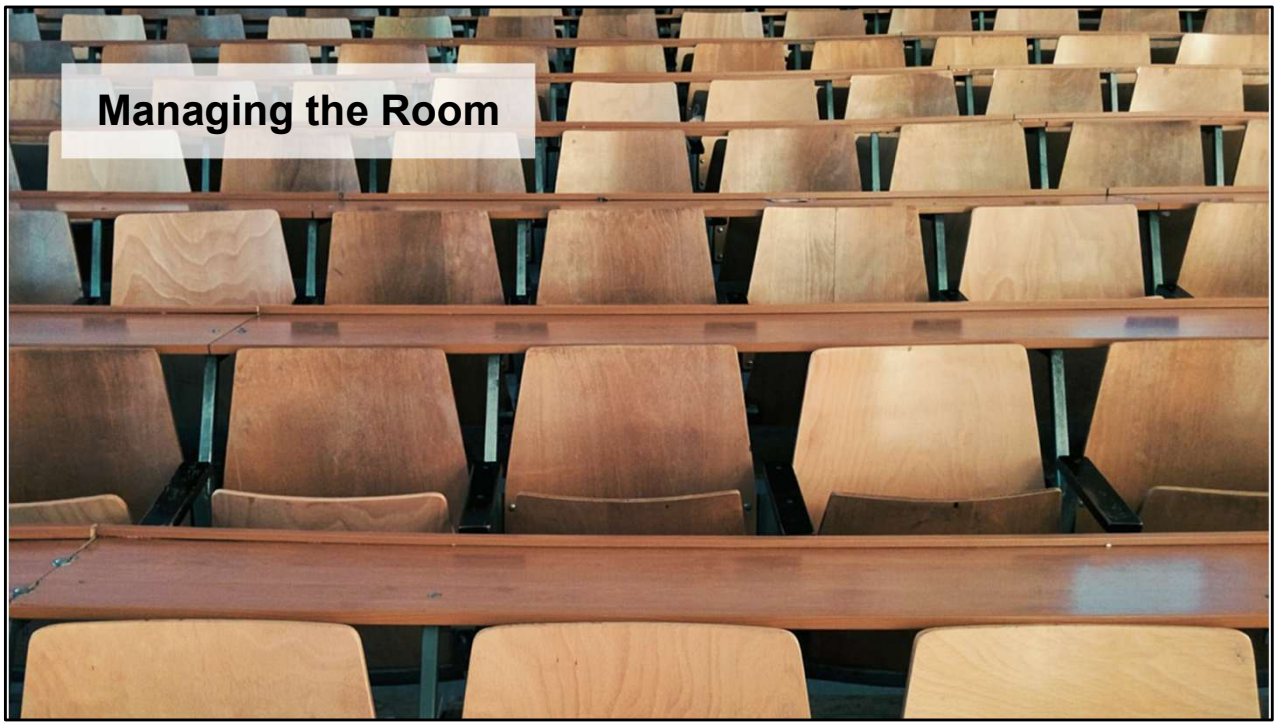
Body language and presence:

Questioning techniques: Bloom's-aligned questions (move from "What happened?" to "Why did it happen?" to "What would you do differently?"), wait time, cold calling vs. voluntary response, think-pair-share as a scaffold for reluctant speakers.



Body language and presence:

The power of the pause: After asking a question, wait. Count to 7 silently. Silence is not awkward — it's thinking time. Most instructors answer their own questions within 2 seconds.



Body language and presence:

Managing the room: Reading energy (glazed eyes = change it up), adjusting on the fly, handling difficult participants (the expert who dominates, the skeptic, the disengaged).

- To maintain appropriate eye contact without staring, you should maintain eye contact for **50 percent of the time while speaking and 70% of the time while listening**. This helps to display interest and confidence. Maintain it for 4-5 seconds.

- No part of your facial expression is more important in communicating sincerity and credibility than eye focus. Nothing else so directly connects you to your listeners-whether in a small gathering or a large group. Effective presenters engage one person at a time, focusing long enough to complete a natural phrase and watch it sink in for a moment. This level of focus can rivet the attention of a room by drawing the eyes of each member of the audience and creating natural pauses between phrases. The pauses not only boost attention, but also contribute significantly to comprehension and retention by allowing the listener time to process the message.

– Presenters who care deeply about their material tend to use their entire bodies to support the message

- **Effective body language** supports the message and projects a strong image of the presenter. Audiences respond best to presenters whose bodies are alive and energetic. Audiences appreciate movement when it is meaningful and supportive of the message. The most effective movements are ones that reflect the presenter's personal investment in the message.

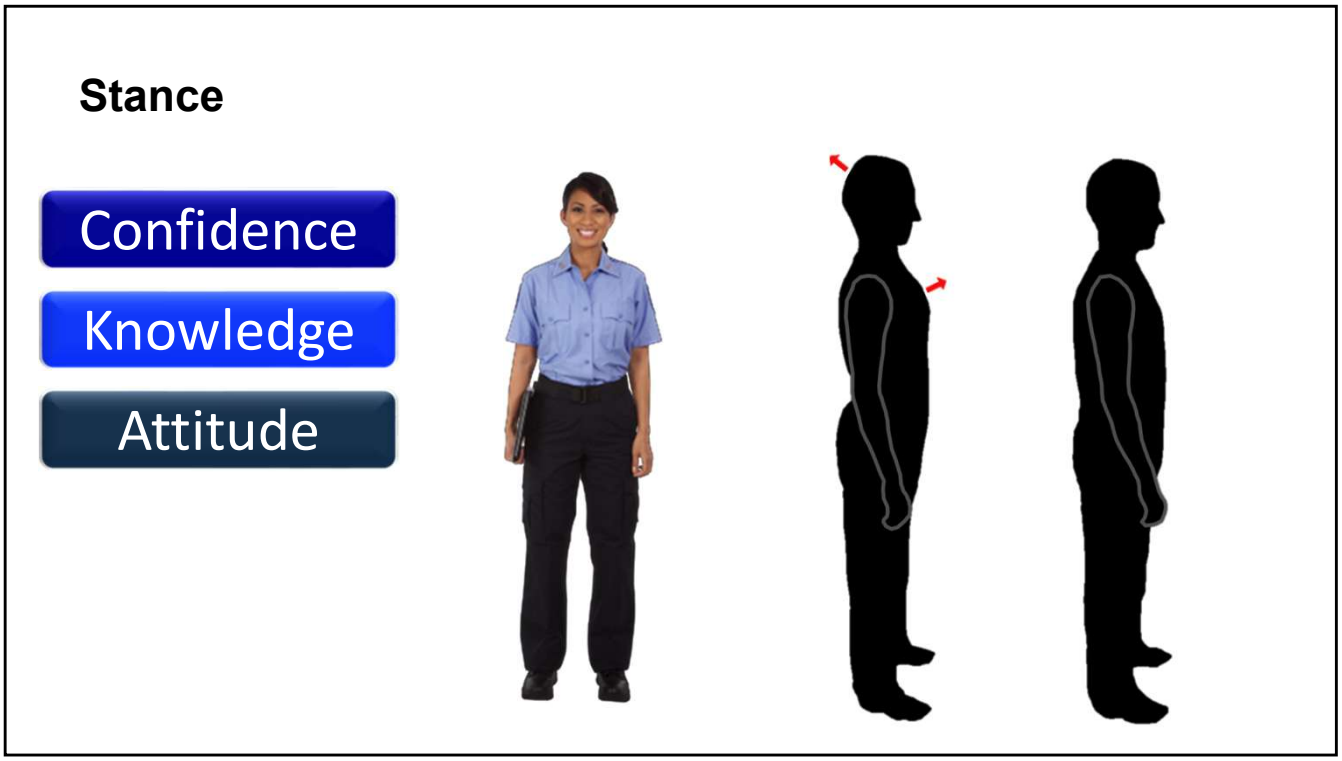
- The gestures of everyday conversation tend to be too small and often too low to use in front of a large audience. Presenters need to scale their gestures to the size of the room. The most effective gestures arise from the shoulder, not the wrist or elbow. Shoulder gestures project better across the distance and release more of the presenter's energy, helping combat any tension that can build in the upper body (particularly under pressure).

- When not gesturing, the hands should sit quietly at the sides of the presenter. Letting the hands fall to the sides between gestures projects ease. These moments of stillness between gestures also have the effect of amplifying the gestures.

- The last thing you want to do is offend someone by jabbing a finger in their face. Pointing can seem aggressive, but many people do it without understanding how intimidating it may be to others. Instead, when you're explaining an idea, "point with an open palm, and keep your fingers together," she writes. "Both men and women point, but women have a tendency to do it more than men."

- Placing your hands on your hips is a posture many people use, but this can actually give off an air of arrogance or impatience.

- Read more: http://www.businessinsider.com/the-right-body-language-to-use-2013-8#ixzz2iKtsNf7R



Body language and presence:

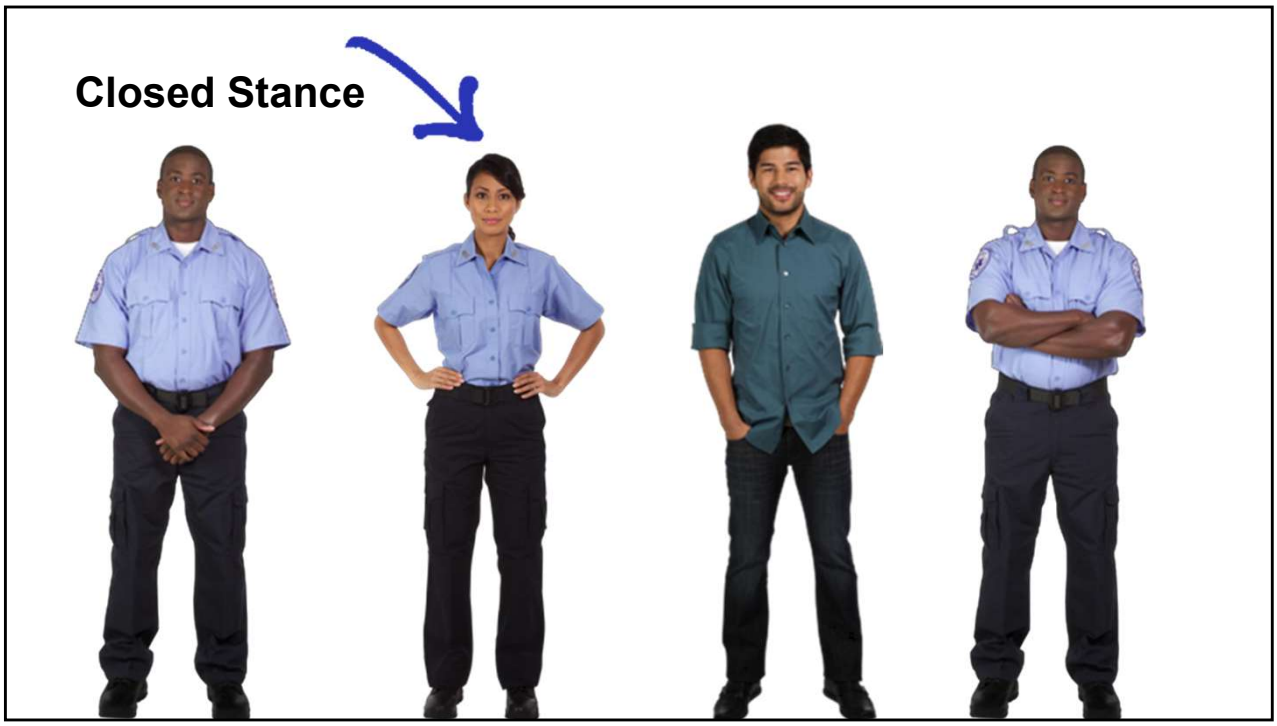
- Stance (planted, not pacing), eye contact (work the room, not the screen)
- movement with purpose (move to emphasize, not out of nervous energy).
- How you stand in front of the room speaks before open your mouth. Your stance can tell the audience that you're happy, scared, confident, or uncomfortable. Audiences "read" these messages unthinkingly but unfailingly. Stance speaks. A balanced stance with weight even but slightly forward tends to say that the speaker is engaged with the audience. A slumped stance leaning to one side can says the speaker doesn't care.
- **Posture:** Stand tall with your shoulders back and chest slightly open. Avoid slouching or having your body angled away from the audience.
- **Feet:** Place your feet shoulder-width apart for a more stable and confident stance.
- **Hands:** Keep your arms relaxed by your sides or make natural, open gestures when speaking. Avoid crossing your arms, as this can be perceived as closed off.
- **Facial Expression:** Maintain a positive and engaging expression, smiling when appropriate.
- **Eye Contact:** Make direct eye contact with the audience to create a connection and build rapport.
- **Movement:** Use natural movements and gestures to enhance your delivery, but avoid excessive or distracting movements. remember to punctuate that movement with stillness. Constant motion, such as swaying, is a distraction that can annoy your listeners.
- **Engagement:** Show genuine interest in your audience and your message. This can be conveyed

through your posture, facial expressions, and the way you speak.

- An open stance in presentations is about using your body language to create a positive and engaging experience for your audience. It helps you project confidence, approachability, and credibility, making your presentation more impactful and effective. An open stance signals confidence and approachability, disarming the audience and removing any objections or triggers they might have.

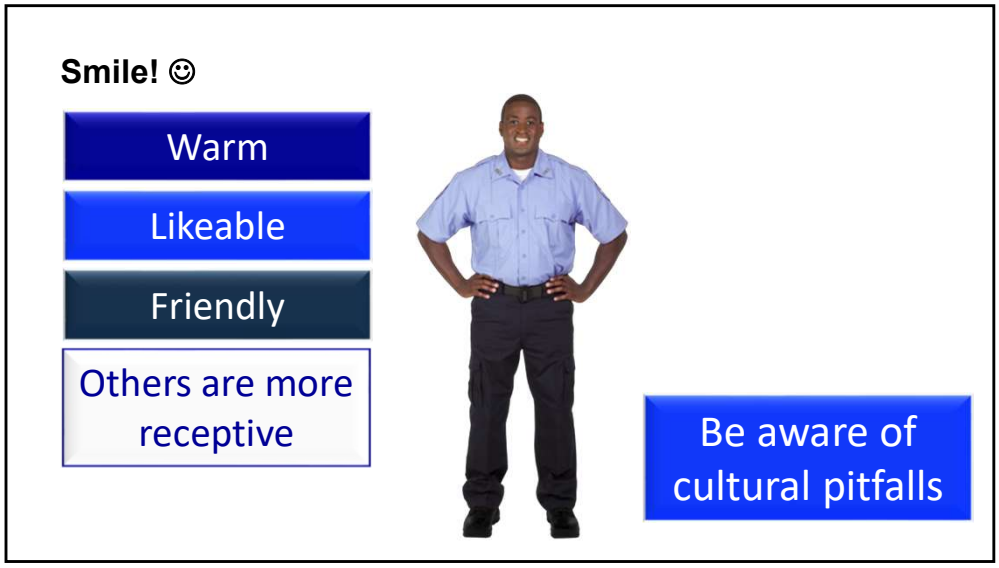
Benefits of an Open Stance:

- **Confidence:** An open stance conveys confidence and authority, helping you project an image of expertise.
- **Approachability:** It signals that you are open and willing to engage with the audience, making them feel more comfortable and engaged.
- **Engagement:** By being open and approachable, you are more likely to draw in the audience and keep them engaged.
- **Credibility:** An open stance can help you build credibility and trust with the audience.



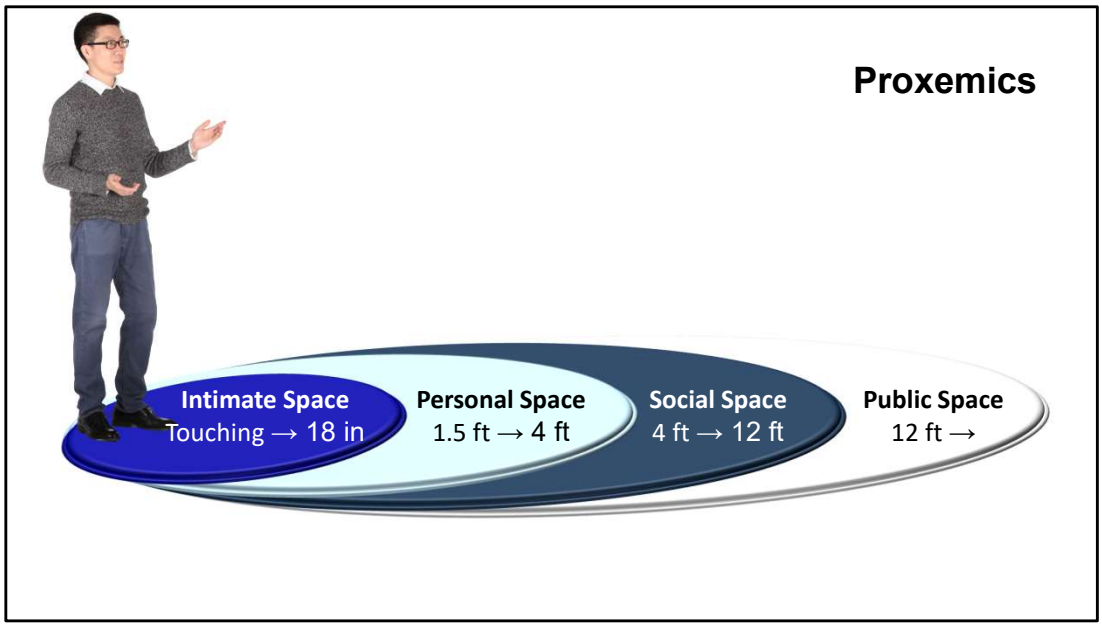
- A closed stance often involves crossed arms or tightly positioned feet, which can suggest defensiveness or anxiety.

- If you maintain a closed stance, the audience may suspect you are hiding something and won't trust you. Remember not to cross your arms or to keep them too close together. You are not a T-Rex, so don't keep your elbows glued to your ribs. Claim the space and show your hands.



Smiling during a presentation helps speakers connect with their audience, convey confidence, and create a more positive and engaging presentation experience. It also releases positive neurotransmitters, which can help calm nerves and improve the speaker's overall attitude.

- **Non-verbal communication:** Smiling is a powerful non-verbal cue that conveys friendliness, approachability, and a positive attitude.
- **Audience connection:** Smiling helps build rapport with the audience by making them feel connected and understood.
- **Confidence and competence:** A smile can signal confidence and competence, making the speaker appear more credible and trustworthy.
- **Positive mood:** Smiling is contagious and can put the audience in a more positive and receptive state of mind.
- **Reduced stress:** The act of smiling releases neurotransmitters that can calm nerves and reduce stress, helping the speaker feel more relaxed and confident.
- **Improved voice:** Smiling can warm up the voice, making it sound more inviting and engaging.
- **Humanity:** Even when delivering serious or challenging information, a smile can show humanity and empathy.
- **Authenticity:** A genuine smile conveys sincerity and authenticity, building trust with the audience.



- **Proxemics:** The study of how people use space in communication.

Intimate space, personal space, social space, and public space are four zones of interpersonal space, each defined by the distance maintained between individuals during interactions. Intimate space (0-18 inches) is reserved for close relationships, while personal space (1.5-4 feet) is for close friends and casual acquaintances. Social space (4-12 feet) is typical for business settings and public interactions, and public space (12 feet or more) is used for public speaking or large gatherings.

Intimate Space:

- **Definition:** The closest zone of personal space, ranging from touching to 18 inches.
- **Use:** Reserved for close relationships like family, romantic partners, and close friends.
- **Examples:** Embraces, whispering, intimate conversations.

Personal Space:

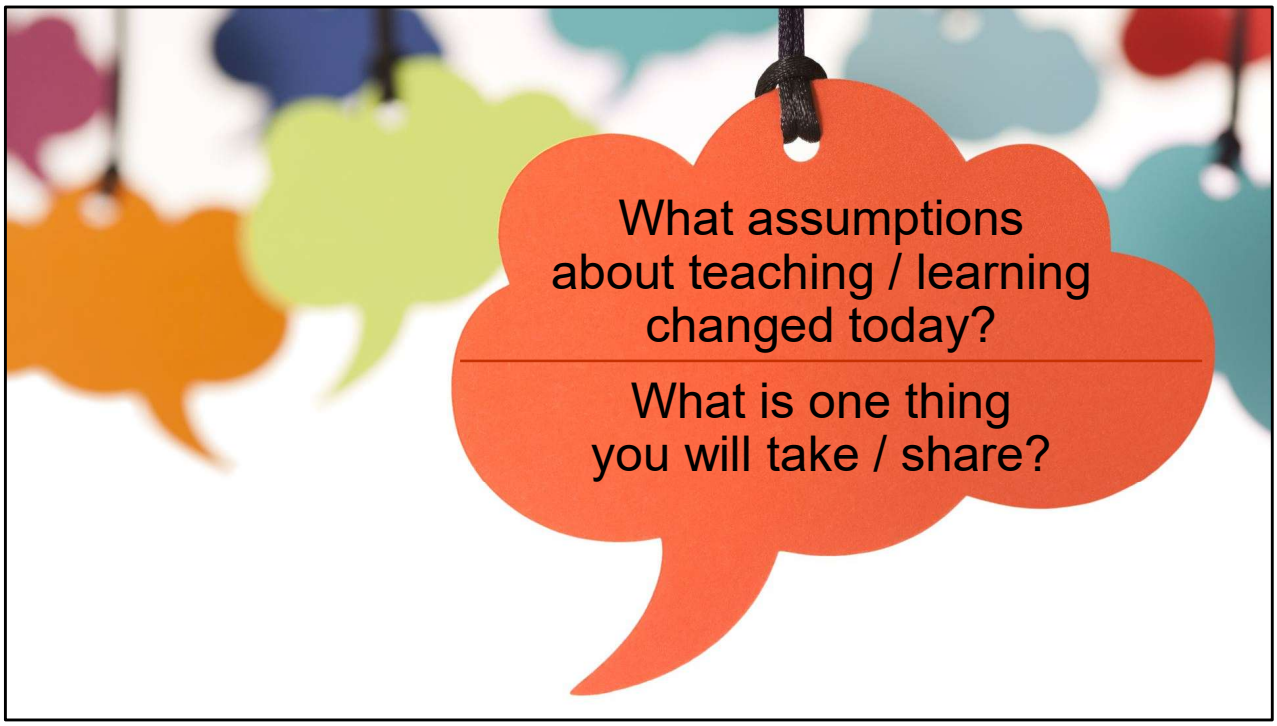
- **Definition:** Ranges from 1.5 to 4 feet.
- **Use:** Used in interactions with close friends, colleagues, and acquaintances.
- **Examples:** Conversations with friends, group discussions.

Social Space:

- **Definition:** Extends from 4 to 12 feet.
- **Use:** Typical in workplaces, classrooms, social gatherings, and public areas like beaches.
- **Examples:** Interactions with strangers, business meetings, casual conversations.

Public Space:

- **Definition:** 12 feet or more.
- **Use:** Used for public speaking, lectures, and large gatherings.
- **Examples:** Speeches, sermons, classrooms.



Closing Reflection + Commitments (5 mn)

Prompts

- “What assumption about teaching changed for you today?”
- “What is one thing you will redesign this month?”

Transformative Learning

- This is the *reintegration* phase—participants commit to new practice.

HANDS-ON WORK SESSION #4: Final Revision Sprint

Participants make their most impactful revisions based on everything covered.

Priority areas: clean up 3–5 slides using visual design principles, add one storytelling element (opening hook or case study), refine one evaluation check (formative assessment question or activity).

Watch for: Participants who resist simplifying slides ("But I need all that information!"). Coach: "Move the detail to your speaker notes or a handout. The slide is a visual aid, not a script."

****If there is time*** Facilitator announcement:** *“I’m going to ask you to share a 2–3 minute segment of your revised presentation with your small group. Choose your strongest revised section and prepare to present/discuss it."* This creates productive urgency and focuses the revision work.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Teaching for Learning
Monday, April 20
8:00 – 12:00
Room 124
FDIC
INTERNATIONAL