

Needs Analysis: AI for Instructional Designers

This document is the foundation of any effective instructional design project. Before developing content, selecting tools, or writing objectives, it is essential to clearly understand what problem needs to be solved, who is experiencing it, and whether training is the right solution. Without this step, learning interventions risk addressing the wrong issue, overlooking critical learner needs, or producing content that is engaging but ultimately ineffective.

In the context of this project, the needs analysis serves an especially important role. The rapid rise of generative AI has created both opportunity and confusion for early-career professionals. While tools are increasingly accessible, the ability to use them effectively within real instructional design workflows requires more than basic familiarity. It demands judgment, structure, and alignment with learning principles.

By grounding the project in a well-defined needs analysis, the design and development phases can move forward with confidence, ensuring that the resulting course is relevant, targeted, and capable of producing meaningful performance improvement rather than simply delivering information.

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1. Problem Statement

Adult novice and early-career instructional designers are not effectively using generative AI in their professional workflow, resulting in:

- Inefficient course development processes
- Inconsistent quality of learning materials
- Over-reliance on trial-and-error AI use
- Low confidence in applying AI appropriately
- Risk of producing inaccurate or pedagogically weak content

This is not a simple tool-skills gap. It is a performance gap involving a lack of structured workflow knowledge, an underdeveloped evaluative judgment, and a limited ability to connect AI outputs to instructional design principles.

Conclusion: This is a valid training need, because learners are motivated but lack knowledge, skills, and decision-making frameworks.

2. Desired Performance

After intervention, learners should be able to:

- Use AI strategically within the ADDIE process
- Generate usable instructional design artifacts (objectives, outlines, content)
- Evaluate and revise AI outputs using quality criteria
- Apply instructional judgment rather than blindly accepting AI output
- Build a repeatable AI-assisted workflow for real job tasks

Performance Indicators

Success will be evident when learners can:

- Produce measurable learning objectives
- Create aligned module outlines
- Identify and correct weak or generic AI outputs
- Demonstrate appropriate AI use decisions across scenarios
- Apply skills to authentic design tasks

3. Root Cause Analysis

The performance gap stems from multiple interacting causes:

A. Knowledge Gaps

- Limited understanding of instructional design fundamentals
- Lack of mental models for where AI fits in workflow
- Poor understanding of AI strengths/limitations

B. Skill Gaps

- Weak prompt construction skills
- Inability to evaluate output quality
- Lack of revision and refinement strategies

C. Judgment Gaps

- Difficulty distinguishing:
 - When to use AI vs. not use it
 - High-quality vs. low-quality output
- Overtrust or distrust of AI

D. Environmental Factors

- Rapid evolution of AI tools
- Lack of formal training pathways
- Inconsistent organizational guidance or policies

Key Insight: The core issue is not “how to use AI,” but how to think with AI as a designer.

4. Learner Analysis

Primary Audience

Adult learners who are:

- Novice or early-stage instructional designers
- Transitioning into L&D roles
- Using AI informally but without structure

Secondary Audience

- Trainers and facilitators
- Subject Matter Experts (SMEs)
- Career changers entering L&D

Characteristics

- Motivated by career growth and efficiency
- Prefer practical, job-relevant learning
- Have uneven prior knowledge
- Experience moderate cognitive load when combining ID + AI concepts

Learning Science Implications

- Need scaffolding (guided → independent practice)
- Benefit from worked examples and fading support
- Require immediate feedback loops
- Prefer chunked, modular learning
- Need opportunities for transfer and application

5. Task Analysis

Core job tasks include:

- Writing learning objectives
- Creating outlines and storyboards
- Drafting content and assessments
- Reviewing and revising materials

AI-Relevant Task Opportunities

AI can support:

- Draft generation (objectives, outlines, content)
- Brainstorming and ideation
- Rewriting and improving clarity

AI should not replace:

- Needs analysis
- Alignment decisions
- Final quality judgment

Training must explicitly map AI use to real job tasks, not abstract features.

6. Gap Analysis

The following provides a clear comparison between the learners' current performance state and the desired performance outcomes identified in the needs analysis. Its purpose is to make the performance problem more concrete by highlighting exactly where learners are falling short and what capabilities must be developed.

Area	Current State	Desired State
AI Use	Ad hoc, inconsistent	Structured, repeatable workflow
Output Quality	Variable, often generic	Aligned, specific, instructionally sound
Confidence	Low to moderate	High, grounded in competence
Judgment	Weak or inconsistent	Strong evaluative decision-making
Productivity	Slow or uneven	Efficient and purposeful

7. Constraints and Considerations

Content Constraints

- AI tools evolve rapidly → risk of obsolescence
- Need tool-agnostic instruction

Delivery Constraints

- Self-paced eLearning environment
- No instructor support (initially)

Learner Constraints

- Wide variability in:
 - o Experience
 - o tech comfort
 - o expectations

Design Constraints

- Must be:
 - o Modular
 - o Update-friendly
 - o Accessibility-compliant (WCAG)

8. Training vs Non-Training Solution

Training is Appropriate Because:

- Learners want to perform but don't know how
- Skills can be taught through:
 - o modeling
 - o practice
 - o feedback
- Performance requires cognitive skill development

Non-Training Supports Needed

To maximize impact, include:

- Job aids (prompt templates, checklists)
- Workflow guides
- Ongoing updates/resources

Best solution = training + performance support

9. Potential Risks

If training is unaddressed, the following is at risk:

- Continued inefficient workflows
- Poor-quality or misleading instructional materials
- Misuse of AI tools
- Reduced competitiveness in job market
- Overproduction of low-value “AI-generated” content

10. Recommended Learning Solution

Solution Type

Self-paced, modular eLearning course

Design Approach

- Task-centered (authentic work tasks)
- Practice-heavy (not theory-heavy)
- Judgment-focused (not tool-focused)

Core Design Principles

- “Learn → Apply → Evaluate → Revise”
- Scaffolded practice → independent performance
- Emphasis on evaluation and revision

11. Key Insight & Final Recommendations

The true need is not learning how to *use AI tools*, but learning how to apply instructional design thinking in an AI-accelerated environment.

This aligns directly with your strongest theme:

- Shift from content creation → content judgment
- Shift from tool use → professional decision-making

It is recommended that we proceed with development, with the following priorities:

1. Anchor everything in real job tasks
2. Teach judgment before automation
3. Design for variability in learner experience
4. Prioritize evaluation and revision skills
5. Include strong performance support tools
6. Keep content modular and updateable