AI in Instructional Design: Decision Trees & Matrices

Strategic Frameworks for Choosing and Implementing AI Tools

Kim M. Lang

AI Assistance Disclosure

This document was created with the assistance of artificial intelligence tools to enhance efficiency and formatting. All research sources have been independently reviewed and verified for accuracy. The instructional design frameworks, strategic recommendations, and pedagogical insights presented represent my original analysis and professional expertise in the field of instructional design.

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Introduction

Making strategic decisions about AI tool adoption, methodology selection, and implementation approaches requires clear frameworks. This document provides practical decision trees and matrices to guide instructional designers through common AI integration decisions, from tool selection to readiness assessment to task-specific recommendations.

How to Use These Frameworks

- **Decision Trees:** Follow the path based on your answers to reach a recommendation
- **Matrices:** Compare multiple factors simultaneously to make informed choices
- **Readiness Assessments:** Evaluate organizational preparedness before implementation
- **Task Recommendations:** Quick reference for which tool to use for specific ID tasks

Decision Tree 1: Tool Selection

Use this decision tree to determine which AI tool(s) are best for your primary needs.

START: What is your primary need?

Option A: Complete Course Development

- **Do you use Articulate 360?**
- → YES: Use Articulate AI Assistant (included with subscription)
- → NO: Consider purchasing Articulate 360 ($1,299/year) OR use ChatGPT/Claude + your current authoring tool

Option B: Video Production

- **Is video >20% of your content?**
- → YES: Invest in Synthesia ($22-67/month) - 50-60% time savings
- → NO: Use ChatGPT/Claude for scripts + traditional video tools

Option C: Analysis & Research

- **Do you need to process long documents (100+ pages)?**
- → YES: Use Claude Pro ($20/month) - 200K token context window
- → NO: ChatGPT Plus ($20/month) is sufficient

Option D: Enterprise/Documentation

- **Do you work primarily in Microsoft 365?**
- → YES: Microsoft 365 Copilot ($30/user/month) for seamless integration
- → NO: Use ChatGPT or Claude for general content creation

Option E: General Content Creation

- **Budget consideration:**
- → Start with ChatGPT Plus ($20/month) - most versatile, includes image generation
- → Add Claude Pro ($20/month) if you need complex analysis and longer context

Decision Tree 2: Methodology Selection

Should you use ADDIE or SAM for your project? Follow this decision tree.

START: Assess Your Project Characteristics

Question 1: Timeline Requirements

- **Is timeline critical? Do you need a course in weeks rather than months?**
- → YES: Lean toward SAM → Continue to Question 2
- → NO: Either approach works → Continue to Question 2

Question 2: Requirements Clarity

- **Are requirements well-defined and stable?**
- → YES: ADDIE is suitable → Continue to Question 3
- → NO (evolving/unclear): Use SAM → RECOMMENDATION: SAM

Question 3: Compliance/Regulatory Needs

- **Does this require extensive documentation, regulatory compliance, or legal review?**
- → YES: Use ADDIE → RECOMMENDATION: ADDIE with AI acceleration
- → NO: Continue to Question 4

Question 4: Stakeholder Involvement

- **Do stakeholders need to see working prototypes early for buy-in?**
- → YES: Use SAM → RECOMMENDATION: SAM with AI prototyping
- → NO: Use ADDIE → RECOMMENDATION: ADDIE with AI acceleration

Summary Recommendations

- **Use SAM when:** Speed is critical, requirements are evolving, or stakeholders need early prototypes
- **Use ADDIE when:** Requirements are stable, documentation is essential, or regulatory compliance is needed

Matrix 1: AI vs Traditional Methods

This matrix helps you decide when to use AI versus traditional methods for specific instructional design tasks.

Task Type	Use AI When...	Use Traditional When...	Hybrid Approach
Content Drafting	Creating first drafts, brainstorming, generating variations	Final quality review, brand voice alignment, nuanced messaging	AI drafts → Human refinement → SME validation
Needs Analysis	Analyzing large datasets (100+ survey responses), pattern identification	Sensitive stakeholder interviews, political considerations, relationship building	AI for data synthesis → Human for interpretation and recommendations
Assessment Creation	Generating question banks, creating varied item types, Bloom's alignment	Final validation, ensuring no bias, verifying answer accuracy	AI generates → ID reviews → SME validates → Pilot test
Video Production	Creating AI avatar videos, multilingual content, rapid prototyping	High-stakes executive messages, authentic personal stories, complex demonstrations	AI for standard training → Traditional for executive/high-touch content
Graphics/Images	Creating custom images, illustrations, concept visualization	Brand-critical assets, photography of real products/people, legal compliance images	AI for concepts and placeholders → Designer for final branded assets
Research Synthesis	Summarizing multiple sources, identifying themes from documents	Final recommendations, strategic decisions, stakeholder presentations	AI synthesis → Human strategic analysis → Stakeholder collaboration
Course Structure	Generating outlines, organizing content, creating learning paths	Innovative pedagogy, unique learning experiences, novel approaches	AI for initial structure → ID for pedagogical enhancement
Evaluation Analysis	Processing survey data, calculating metrics, generating reports	Final insights, improvement recommendations, action planning	AI for data analysis → Human for strategic insights and next steps

Matrix 2: AI Readiness Assessment

Assess your organization's readiness for AI implementation across key factors. Score each factor 1-5 (1=Not Ready, 5=Fully Ready).

Factor	Not Ready (1-2)	Somewhat Ready (3)	Fully Ready (4-5)	Your Score
Budget	No budget allocated for AI tools	Limited budget (<$500/year)	Adequate budget allocated (>$1000/year)	___
Leadership Support	No awareness or resistance	Aware but hesitant	Supportive and encouraging	___
Technical Infrastructure	Limited internet, old systems	Basic infrastructure in place	Modern systems, good connectivity	___
Staff AI Literacy	No AI experience or training	Some staff have experimented	Team trained in AI tools	___
Data Privacy Policies	No policies in place	Policies in development	Clear policies established	___
Time for Learning	No time allocated	Minimal time available	Dedicated learning time	___
Quality Standards	No review processes	Basic review in place	Robust QA processes	___
Change Management	Resistance to new tools	Some openness to change	Culture embraces innovation	___

Scoring Interpretation:

- **32-40 points:** High readiness - proceed with full AI implementation
- **24-31 points:** Moderate readiness - start with pilot projects, address gaps
- **16-23 points:** Low readiness - focus on building foundation (training, policies, buy-in)
- **8-15 points:** Not ready - address critical barriers before AI adoption

Matrix 3: Task-Specific Tool Recommendations

Quick reference guide for which AI tool to use for specific instructional design tasks.

ID Task	Best Tool	Alternative	Time Savings	Key Benefit
Course outline generation	Articulate AI	ChatGPT/Claude	65-70%	Integrated workflow
Learning objectives	Claude	ChatGPT	60-70%	Bloom's alignment
Quiz questions (bulk)	Articulate AI	ChatGPT	75-80%	Automatic integration
Scenario writing	Claude	ChatGPT	50-60%	Nuanced narratives
Job aids/quick references	ChatGPT	Claude	60-70%	Versatility
Survey analysis	Claude	ChatGPT	70-75%	Long context window
Video production	Synthesia	Traditional tools	50-60%	No filming needed
Custom images	ChatGPT (DALL-E)	MS Designer	60-70%	Conversational creation
Infographics	MS Designer	Canva	50-60%	Professional templates
Audio narration	ElevenLabs/Articulate	Traditional voice	70-80%	32+ languages
Facilitator guides	ChatGPT/Claude	Manual creation	60-65%	Comprehensive output
Stakeholder emails	MS Copilot	ChatGPT	40-50%	M365 integration
Data visualization	MS Copilot	Manual Excel	45-55%	Auto-chart creation
Needs analysis report	Claude	ChatGPT	65-70%	Synthesis quality
Evaluation reports	Claude	ChatGPT	70-75%	Data interpretation

Decision Tree 3: AI vs Human Decision

When should you use AI versus rely solely on human expertise? This decision tree provides guidance.

START: Evaluate the Task

Step 1: Safety & Risk Assessment

- **Could errors cause harm, legal liability, or safety issues?**
- → YES (high risk): Use AI for drafts ONLY + require dual SME review + legal approval
- → NO (low risk): Continue to Step 2

Step 2: Accuracy Requirements

- **Does this require 100% factual accuracy (compliance, regulations, technical procedures)?**
- → YES: AI assists, human verifies every detail, SME validates
- → NO: Continue to Step 3

Step 3: Volume & Repetition

- **Is this a high-volume, repetitive task (50+ quiz questions, multiple similar modules)?**
- → YES: AI is ideal - generates volume quickly, human reviews samples
- → NO: Continue to Step 4

Step 4: Creativity & Innovation

- **Does this require breakthrough creativity or novel pedagogical approaches?**
- → YES: Human-led with AI for brainstorming support
- → NO: Continue to Step 5

Step 5: Relationship & Politics

- **Does this involve sensitive stakeholder relationships or organizational politics?**
- → YES: Human-only approach
- → NO: AI is appropriate - proceed with AI assistance + human oversight

Matrix 4: Project Complexity Assessment

Determine the appropriate level of AI integration based on project complexity.

Complexity Factor	Low Complexity	Medium Complexity	High Complexity	AI Integration Level
Content Volume	1-3 modules, <2 hours	4-10 modules, 2-8 hours	10+ modules, 8+ hours	Low: Minimal | High: Extensive
Subject Matter	General business skills	Technical but accessible	Highly specialized/technical	Low: High AI | High: AI + SME
Stakeholders	1-2 stakeholders	3-5 stakeholders	6+ stakeholders or C-suite	Low: AI comms | High: Human touch
Multimedia Needs	Text + basic images	Text, images, some video	Extensive multimedia	Low: Full AI | High: AI + traditional
Customization	Template-based	Some customization	Fully custom solution	Low: AI templates | High: AI + creative
Compliance	None or minimal	Some compliance needs	Heavy regulatory compliance	Low: AI first | High: Human-led
Timeline	Weeks	1-2 months	3+ months	Low: Rapid AI | High: Structured ADDIE
Innovation Required	Standard approach	Some innovation	Breakthrough innovation	Low: AI patterns | High: Human creativity

Integration Level Recommendations:

- **Minimal AI (0-2 High factors):** Simple projects - use AI extensively, ~70-80% AI-assisted
- **Moderate AI (3-4 High factors):** Balanced approach - ~50-60% AI-assisted, human-led strategy
- **Limited AI (5+ High factors):** Complex projects - AI for efficiency only, ~30-40% AI-assisted

Conclusion: Making Strategic AI Decisions

Key Principles for Decision-Making

1. **Start with the end in mind** - What outcome do you need? Let that guide tool selection
2. **Match tool to task** - Use the task-specific matrix as your quick reference
3. **Assess risk first** - High-risk content requires human validation regardless of AI capability
4. **Consider volume** - AI excels at high-volume, repetitive tasks
5. **Build in human oversight** - AI assists, humans decide and validate
6. **Evaluate readiness** - Use the readiness matrix before major AI investments

Using These Frameworks in Practice

- **Project Kickoff:** Use Methodology Selection tree (ADDIE vs SAM)
- **Tool Selection:** Follow Tool Selection tree based on primary needs
- **Daily Tasks:** Reference Task-Specific Tool matrix
- **Quality Decisions:** Use AI vs Human tree for high-stakes content
- **Strategy Planning:** Complete Readiness Assessment before organizational rollout
- **Scope Definition:** Use Complexity matrix to determine appropriate AI integration level

Next Steps

These decision frameworks are designed to be practical tools you can reference daily. Consider printing the matrices as quick reference guides or creating digital versions for your team. Pair these frameworks with the 90-Day Implementation Roadmap to systematically integrate AI into your instructional design practice.

References

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About This Series

This document is part of a comprehensive AI Integration in Instructional Design series:

- Integrating AI in the ADDIE Module
- Integrating AI in SAM
- Ethical Use of AI in Instructional Design
- AI Tool Comparisons and Capabilities
- Prompt Templates
- ROI Framework (calculating return on investment)
- AI Decision Trees