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CHAPTERS IN THIS PREVIEW

- Chapter 1: The Foundations of Instructional Design

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Instructional Design Basics - Build Better Courses and Training

Alkademy Content Team

1st Edition

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Alkademy Books

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PREFACE

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I have spent years watching smart, knowledgeable people struggle to teach what they know. Not because they lacked expertise — they had plenty of it — but because expertise and the ability to transfer that expertise to someone else are two entirely different skills. I have seen subject matter experts deliver brilliant lectures that left learners completely lost. I have reviewed online courses packed with valuable information that somehow managed to produce no measurable change in what students could actually do. And I have sat through corporate training sessions where participants checked their phones within the first ten minutes and never really came back, mentally speaking. That gap between knowing something and teaching it effectively is what motivated me to write this book. After years of designing, building, and evaluating learning experiences across classrooms, corporate environments, and digital platforms, I became convinced that most of the problems I kept seeing came down to one thing: a lack of intentional structure. This book is my attempt to give you that structure in a form you can actually use.

Before we go any further, let me be honest about who this book is for — and who it is not for. If you are an instructor, a corporate trainer, a course creator building content on platforms like Teachable or Udemy, or someone inside an organization who has been handed the responsibility of developing training materials, this book was written with you in mind. I have assumed that you bring real knowledge to the table in your subject area. What I have not assumed is that you have any formal background in education theory, learning science, or instructional design. You do not need it to benefit from what follows. I have deliberately translated the academic foundations

of this field into practical language and reusable tools, because most of the people doing this work every day do not have the luxury of a graduate degree in curriculum development. They need frameworks that work on a Tuesday afternoon when a training deadline is two weeks away.

The philosophy behind this book is simple: good instruction is not an accident, and it is not a talent you either have or do not have. It is a craft, and like any craft, it can be learned through the right combination of principles and practice. I believe that structure is not the enemy of creativity — it is what makes creativity useful. When you have a reliable framework for building a lesson or a course, you free up your mental energy to focus on the content itself, on your learners, and on the moments of genuine connection that make teaching meaningful. Every tool, checklist, and framework in this book exists to reduce the cognitive load of course design so you can spend more time on what actually matters.

The book is organized into four connected parts. The first part lays the groundwork by exploring how people actually learn — not as a deep dive into cognitive science, but as a practical orientation to why certain design choices work and others consistently fail. Understanding a few key principles about memory, attention, and motivation will inform every decision you make later in the process. The second part focuses on the architecture of a course: how to write learning objectives that drive everything else, how to sequence content so that it builds logically and sticks, and how to design assessments that measure real learning rather than just recall. This is where most course creators spend too little time, and it is where the biggest gains are available. The third part addresses learner engagement — not as a collection of tricks to make content feel entertaining, but as a set of deliberate strategies for keeping learners cognitively active and emotionally invested throughout the experience. The fourth and final part brings everything together with practical checklists and a reusable design process you can apply to your next course, your next training module, or your next workshop, regardless of the subject matter or delivery format.

By the time you finish this book, you should be able to sit down with a topic you know well and build a coherent learning experience around it — one with clear objectives, logically sequenced content, meaningful practice activities, and assessments that actually tell you whether learning happened. You will have a repeatable process rather than a blank page. You will be able to look at existing courses or training programs and quickly identify what is working, what is not, and why. And you will have a shared vocabulary for talking about instructional design with colleagues, clients, or stakeholders, which turns out to be more valuable than most people expect.

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I want to be transparent about what this book does not cover, and why. It does not go deep into the technical side of building courses — learning management systems, video production, graphic design, and e-learning authoring tools are outside its scope. Those are important skills, but they are also skills that shift rapidly as platforms evolve, and there are better resources dedicated specifically to them. This book focuses on the thinking that should happen before you open any tool. Similarly, I have not attempted to cover every instructional design model in the field. There are entire graduate courses devoted to that survey, and most practitioners are better served by understanding one solid process deeply than by skimming a dozen competing frameworks. The approach I offer here is grounded in established principles, but it is deliberately streamlined for people who need to build things in the real world.

What I hope you take from this book, more than any single framework or checklist, is a new way of thinking about the relationship between teaching and learning. Your job as an instructional designer — whether that title appears on your business card or not — is not to deliver information. It is to engineer the conditions under which someone else can genuinely grow. That shift in perspective changes everything. Let us get started.

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To all the lifelong learners, who never stop exploring, questioning, and growing.

To those who dare to teach themselves, and then teach others.

This book is for you.

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CHAPTER 1

THE FOUNDATIONS OF INSTRUCTIONAL DESIGN

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1.1 The Foundations of Instructional Design

Imagine you have just been asked to train a group of new employees on a complex software system your company uses. You know the software inside and out — you have used it for years, you understand its quirks, and you could navigate it blindfolded. So you sit down, open a presentation, and start typing everything you know. By the time the training session ends three hours later, half the room looks glazed over, a quarter of the participants are quietly panicking, and the remaining few are asking questions that suggest they missed the entire point. Sound familiar? This scenario plays out in organizations and classrooms every single day, and it reveals a truth that is both humbling and empowering: knowing something deeply does not automatically mean you can teach it effectively. That gap — between expertise and effective instruction — is precisely where instructional design lives.

1.1.1 What Is Instructional Design?

Instructional design is the systematic process of analyzing learning needs and goals, then crafting structured experiences that help people acquire knowledge, develop skills, and change behaviors in measurable ways. The word *systematic* is doing a great deal of work in that definition. It signals that instructional design is not improvised, not accidental, and not simply the act of organizing information into slides. It is a disciplined approach grounded in research about how human beings learn, supported by proven frameworks, and guided by clearly defined outcomes.

The field emerged formally in the mid-twentieth century, growing out of military training programs developed during World War II, when the United States government needed to train enormous numbers of soldiers quickly and consistently. Researchers and psychologists were brought in to study what made training effective, and their findings laid the groundwork for what would eventually become a professional discipline. By the 1960s and 1970s, theorists like Robert Gagné had published foundational works — most notably *The Conditions of Learning* — that gave instructional designers a scientific vocabulary and a set of principles to work from. Today, instructional design spans corporate training, higher education, K-12 schooling, healthcare, military, and the rapidly expanding world of online and digital learning.

It is worth distinguishing instructional design from a few related concepts that often get conflated with it. *Curriculum development* refers to the broader planning of what content will be taught across a program or institution, often at a policy level. *Teaching* or *facilitation* is the act of delivering instruction in real time. *Content creation* is the production of materials like videos, slides, or written guides. Instructional design encompasses elements of all three, but its defining characteristic is the deliberate, evidence-based process of deciding *how* learning will be structured so that it actually works. An instructional designer might never stand in front of a classroom, but their decisions shape everything that happens there.

Example: Consider a pharmaceutical company that needs to train its sales representatives on a new drug's mechanism of action, side effects, and compliance regulations. A subject matter expert — perhaps a senior pharmacist or a medical director — could simply deliver a lecture. But an instructional designer working with that expert would ask different questions: What do the sales reps already know? What specific behaviors need to change after training? How will we know if the training worked? What are the consequences of a rep misunderstanding a compliance requirement? Those questions lead to a fundamentally different — and far more effective —

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training program than a lecture alone would produce.

1.1.2 Why Instructional Design Matters

The stakes of poor instruction are higher than most people realize. In a corporate setting, ineffective training translates directly into lost productivity, compliance failures, customer service breakdowns, and employee frustration. In education, poorly designed courses contribute to disengagement, dropout rates, and the persistent sense among students that learning is something that happens *to* them rather than something they actively do. In healthcare, bad training can endanger lives. Even in lower-stakes contexts — a community workshop, an online tutorial, a company onboarding program — poorly designed instruction wastes the most precious resource any learner has: their time.

Good instructional design matters because it respects the learner. When a course is thoughtfully designed, learners spend their cognitive energy on the content itself rather than on trying to figure out what they are supposed to be learning, why the material is organized the way it is, or what they are expected to do with the information. This is not a trivial distinction. Cognitive load theory, developed by psychologist John Sweller in the 1980s, demonstrates that the human working memory has a limited capacity. When a poorly designed course forces learners to simultaneously process confusing navigation, irrelevant information, and unclear instructions, they exhaust that capacity before they ever reach the actual learning. Good design clears the path.

Instructional design also matters for the people creating training and courses. Without a structured approach, course creators often fall into predictable traps: they include too much content because they cannot decide what to cut, they sequence material in ways that make sense to an expert but confuse a novice, and they have no reliable way to evaluate whether their instruction actually worked. A systematic design process gives creators a framework for making decisions, a rationale they can defend, and a feedback loop that allows for continuous improvement.

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Key Insight

The most common mistake new course creators make is treating instructional design as a content problem rather than a learning problem. The question is never simply "What do I need to cover?" The real question is always "What does the learner need to be able to *do*, and how do I design an experience that gets them there?" This shift in perspective — from content delivery to learning facilitation — is the foundation of everything that follows in this book.

1.1.3 The Gap Between Knowing and Teaching

There is a well-documented psychological phenomenon called the *curse of knowledge* — a cognitive bias first named by economists Colin Camerer, George Loewenstein, and Martin Weber in a 1989 paper. The curse of knowledge describes our inability, once we have learned something, to accurately remember or imagine what it felt like not to know it. For instructors and course creators, this bias is one of the most insidious enemies of effective teaching. When you have been using a spreadsheet application for fifteen years, you genuinely cannot remember that the concept of a cell reference was once mysterious. When you have practiced a surgical technique for a decade, the motor memory feels so natural that you struggle to articulate the individual steps. This gap between the expert's experience and the novice's reality is where so many well-intentioned courses fall apart.

Instructional design provides the tools to bridge that gap deliberately. Rather than relying on an expert's intuition about what learners need, the design process begins with a formal analysis of the audience — their existing knowledge, their goals, their misconceptions, and their context. This analysis forces the course creator to step outside their own expertise and see the material through a beginner's eyes. It is uncomfortable, often surprising, and absolutely essential.

Scenario: Maria is a senior data analyst who has been asked to create an online course teaching basic data literacy to marketing professionals in her company. Maria has a master's degree in statistics and has worked with data for twelve years. Her first draft of the course begins with a module on data types — nominal, ordinal, interval, and ratio scales — because that is how she learned the subject in graduate school. But when she tests the draft with a group of marketing colleagues, they are confused and disengaged within the first twenty minutes. They do not understand why data types matter, and the abstract terminology feels disconnected from

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anything they actually do at work. Maria has fallen into the curse of knowledge. An instructional design approach would have started by asking: what decisions do these marketing professionals actually make with data? What does a "data literate" marketing manager look like in practice? The answers to those questions would have led to a completely different — and far more effective — course structure.

Bridging the knowing-teaching gap also requires understanding that expertise changes not just what you know, but how you think. Experts organize knowledge in rich, interconnected schemas that allow them to recognize patterns quickly and solve problems efficiently. Novices, by contrast, hold information in isolated fragments that are not yet connected to each other or to practical application. Effective instruction helps learners build those connections progressively, scaffolding new knowledge onto existing understanding rather than presenting it as a collection of isolated facts. This is why a great instructional designer does not simply ask "What is true about this subject?" but rather "How does understanding develop in this subject, and what sequence of experiences will move a learner from where they are to where they need to be?"

1.1.4 How People Learn: The Starting Point for Design

Before you can design effective instruction, you need a working understanding of how human beings actually learn. This does not mean you need a doctorate in cognitive psychology, but it does mean you need to be familiar with a handful of foundational principles that have been consistently supported by decades of research. These principles are not abstract theories — they have direct, practical implications for every decision you make as a course creator.

The Role of Prior Knowledge

Learning does not happen in a vacuum. Every new piece of information a learner encounters is processed in relation to what they already know. This principle, central to constructivist learning theory as articulated by theorists like Jean Piaget and Lev Vygotsky, has profound implications for instructional design. If a learner has strong prior knowledge that is accurate, new information can be connected to it efficiently and retained well. If a learner has misconceptions — incorrect prior knowledge — those misconceptions actively interfere with learning and must be addressed directly before new content can take hold.

This is why audience analysis is not a bureaucratic formality in the instructional design process.

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It is the essential first step that determines almost everything else. A course designed for true beginners will look and feel fundamentally different from a course designed for intermediate practitioners, even if the subject matter is the same. Skipping audience analysis and designing for an imaginary average learner is one of the most reliable ways to produce a course that works for almost nobody.

Memory, Retention, and the Spacing Effect

Human memory is not like a hard drive. Information is not simply stored and retrieved with equal reliability regardless of how it was encoded. Research going back to Hermann Ebbinghaus in the late nineteenth century has demonstrated that we forget most of what we learn within days unless we encounter it again. The *spacing effect* — the finding that learning is far more durable when study is distributed over time rather than concentrated in a single session — is one of the most replicated findings in all of educational psychology. Yet the vast majority of training programs are designed as single-session events with no follow-up, no spaced repetition, and no mechanism for reinforcing learning over time.

For instructional designers, the spacing effect suggests that course architecture should include deliberate retrieval practice — activities that require learners to recall information from memory rather than simply re-read it — and that important concepts should be revisited across multiple sessions or modules rather than taught once and abandoned. This is not merely a nice-to-have feature. It is the difference between training that changes behavior and training that produces a temporary performance boost that evaporates within two weeks.

Active Learning and the Limits of Passive Consumption

Research consistently shows that passive consumption of information — watching a video, reading a text, listening to a lecture — produces far weaker learning outcomes than active engagement with material. Active learning requires learners to process information deeply: to apply it, analyze it, connect it to other knowledge, explain it in their own words, or use it to solve a problem. The *generation effect*, a well-established cognitive phenomenon, demonstrates that information we generate ourselves — even if imperfectly — is remembered far better than information we passively receive.

Example: A corporate compliance training program that consists of forty-five minutes of video

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followed by a ten-question multiple-choice quiz is a classic passive learning design. Learners watch, they absorb (or do not), and they click through the quiz, often retaking it until they pass. Compare this to a redesigned program where learners are presented with realistic workplace scenarios and asked to decide how they would respond, then receive immediate feedback explaining why certain choices comply with regulations and others do not. The second design is more effortful, sometimes more frustrating in the moment, and significantly more effective at producing lasting behavioral change. The discomfort of active learning is not a bug — it is a feature.

1.1.5 A Systematic Approach: The ADDIE Model and Beyond

Instructional design is not practiced in a single way. Over the decades, the field has produced numerous process models, each offering a structured approach to moving from a learning need to a finished, effective course. The most widely known of these is the **ADDIE model**, an acronym that stands for Analysis, Design, Development, Implementation, and Evaluation. ADDIE is not a rigid procedure but a conceptual framework — a way of thinking about the phases of work involved in creating instruction.

Phase	Key Activities
Analysis	Identify the learning need, analyze the audience, assess existing knowledge, define constraints and context
Design	Write learning objectives, sequence content, choose instructional strategies, plan assessments
Development	Create course materials, build activities, produce media, assemble the course
Implementation	Deliver the course, facilitate learning, manage the learner experience
Evaluation	Measure learning outcomes, gather feedback, assess transfer to real-world performance

Table 1.1: The ADDIE Model: Phases and Key Activities

The ADDIE model is sometimes criticized for being too linear — implying that each phase must be fully completed before the next begins, which is rarely practical in the real world. In response to this limitation, alternative models have emerged. **SAM** (the Successive Approximation Model), developed by Michael Allen, emphasizes rapid prototyping and iterative development, cycling quickly through design and development in short loops rather than completing a lengthy analysis

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phase before any materials are created. **Agile instructional design** borrows from software development methodologies, breaking projects into short sprints with frequent stakeholder review. For most practitioners, the choice of model matters less than the underlying discipline it represents: a commitment to analyzing before designing, designing before building, and evaluating throughout.

What all of these models share is a rejection of the most common alternative approach, which might be called "content dumping" — the practice of taking everything a subject matter expert knows and transferring it into a slide deck or a document with the hope that learners will absorb it through proximity. Content dumping is not instructional design. It is the absence of instructional design, and its results are predictable: information-dense courses that overwhelm learners, fail to produce behavioral change, and leave everyone involved wondering why training does not seem to work.

1.1.6 The Instructional Designer's Mindset

Beyond any specific model or framework, effective instructional design requires a particular way of thinking — a mindset that shapes how you approach every decision in the course creation process. This mindset has several defining characteristics that are worth naming explicitly, because they run counter to some deeply ingrained habits that many course creators bring to their work.

The first characteristic is *learner-centricity*. An instructional designer's primary loyalty is to the learner, not to the content, not to the subject matter expert, and not to the organization's desire to cover as many topics as possible in as little time as possible. Every decision — what to include, how to sequence it, how to assess it — is made by asking: what does this do for the learner? This sounds obvious, but it is genuinely difficult in practice, especially when you are working with a passionate subject matter expert who believes every detail of their field is essential, or when an organizational stakeholder is more concerned with checking compliance boxes than with whether anyone actually learns anything.

The second characteristic is *outcome orientation*. Instructional designers think in terms of what learners will be able to do after instruction, not what they will be exposed to during it. This distinction between outputs (content delivered) and outcomes (capabilities developed) is fundamental. A well-written learning objective does not say "Learners will understand the principles of project management." It says "Learners will be able to create a project timeline that identifies

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dependencies, assigns responsibilities, and flags critical path activities." The second version is observable, measurable, and actionable — it tells both the designer and the learner exactly what success looks like.

The third characteristic is *evidence-based decision making*. Good instructional designers do not rely solely on intuition or personal preference. They draw on research, they test their assumptions with real learners, and they treat evaluation data as a gift rather than a threat. When a course is not working, the response is not defensiveness but curiosity: what in the design is causing this problem, and how do we fix it?

Case Study: A large technology company redesigned its new employee onboarding program after exit surveys revealed that new hires consistently felt unprepared for their roles after completing the standard two-week training. Rather than simply adding more content to the existing program, the instructional design team conducted structured interviews with recent hires, their managers, and high-performing employees who had joined in the past year. The analysis revealed that the problem was not a lack of information — the existing program covered everything — but a lack of application. New hires had been told how to do their jobs but had never practiced doing them in a safe, low-stakes environment. The redesigned program cut content by thirty percent and replaced the removed material with realistic simulations, role-playing scenarios, and structured feedback sessions. Within two quarters, manager ratings of new hire readiness increased significantly, and time-to-productivity dropped by an average of three weeks. The lesson was not that more training was needed, but that better-designed training was.

1.1.7 Who Does Instructional Design?

One of the most important things to understand about instructional design as a field is that it is practiced by an enormously diverse group of people. There are dedicated instructional design professionals whose entire job is designing and developing learning experiences. But there are also thousands of teachers, trainers, managers, subject matter experts, entrepreneurs, and content creators who apply instructional design principles — sometimes without knowing the formal terminology — every time they create a lesson plan, a training module, an online course, or a workshop.

If you are reading this book, you likely fall into the second category. You may be a manager who has been asked to onboard new team members. You may be a consultant building an online

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course around your area of expertise. You may be a teacher developing curriculum, or a human resources professional redesigning a compliance training program that everyone currently dreads. You do not need a degree in instructional design to apply its principles effectively. What you need is a clear understanding of those principles, a systematic approach to your work, and the discipline to put the learner's needs at the center of every decision you make. That is what this book is here to provide.

Common Mistake

Many first-time course creators assume that good instructional design is primarily about production quality — polished videos, professional graphics, slick interfaces. While presentation matters, research consistently shows that instructional quality (the quality of the learning design itself) has a far greater impact on outcomes than production quality. A thoughtfully designed course delivered through simple tools will outperform a beautifully produced course with poor learning design almost every time. Invest first in the design, then in the production.

1.1.8 Setting Yourself Up for Success

As you move through this book, you will encounter a progression of concepts and tools that build on each other, beginning with the foundational ideas introduced in this chapter and moving toward increasingly specific and practical techniques. Each chapter is designed to give you not just conceptual understanding but actionable skills — things you can apply immediately to whatever course or training program you are working on.

The most important thing you can do right now, before you read another chapter, is to ground your learning in a real project. Think about a course or training program you want to build, or one you have been asked to build. Keep that project in mind as you read. Every principle, every framework, every technique in this book will become more meaningful — and more memorable — when you are actively connecting it to a real challenge you are trying to solve. Learning about instructional design in the abstract is useful. Learning about it while designing an actual course is transformative.

This is, of course, itself an instructional design principle: learning is most effective when it is contextualized, when it connects to the learner's existing goals and challenges, and when it

requires active application rather than passive reception. In writing this book, the same principles that the book teaches have been applied to the book itself. That is not an accident. It is what good design looks like.

Key Takeaways

- Instructional design is a systematic process for creating learning experiences that are efficient, effective, and engaging — it is not the same as content creation, curriculum development, or teaching, though it informs all three.
- The gap between knowing something deeply and being able to teach it well is real and well-documented. Bridging it requires deliberate design decisions grounded in an understanding of how novices learn, not just how experts think.
- Understanding how people learn — including the roles of prior knowledge, memory and retention, and active engagement — is the essential starting point for building any course or training program.
- Good instructional design benefits both the learner and the instructor: learners experience less confusion and achieve better outcomes, while course creators gain a framework for making decisions and a reliable way to evaluate whether their instruction actually worked.
- Structured design models like ADDIE provide a conceptual roadmap from learning need to finished course, emphasizing analysis before design, design before development, and evaluation throughout.
- The instructional designer's mindset is defined by learner-centricity, outcome orientation, and evidence-based decision making — a set of habits that run counter to the content-dumping approach that dominates much of the training world.

Exercises

1. Write a one-paragraph description of a course or training program you want to build. Be specific about the audience, the subject matter, and the context in which learning will take place. Then, setting aside everything else you might want learners to know, identify the single most important thing a learner should be able to *do* after completing your course.

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Write that outcome as a concrete, observable action — not "understand" or "appreciate," but a verb that describes real-world performance.

2. Find an existing course or training program you have taken — it could be a workplace training, an online course, a workshop, or a class. Identify three specific things that were confusing, ineffective, or frustrating about the experience. For each one, write a hypothesis about the design decision that caused the problem. For example: "The module on compliance regulations felt overwhelming and I retained almost nothing" might be explained by "The designer included every regulation rather than prioritizing the ones most relevant to my role, which caused cognitive overload." Practice thinking like a designer, not just a dissatisfied learner.

3. Identify one person who represents a potential learner for the course you described in Exercise 1. Conduct a brief interview — in person, by phone, or by video — and document the following: their current level of knowledge or skill in the subject area, their specific goals for learning it, any prior experiences they have had trying to learn this topic, and any fears, obstacles, or misconceptions they bring to it. Compare what you discover to what you assumed about your audience before the interview. Note where your assumptions were accurate and where they were not.

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You've reached the end of the preview.

The complete edition contains all chapters, including:

- Full chapter content with detailed examples and exercises
- Glossary of key terms
- Appendices and reference material
- A comprehensive index

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