

Chapter 1

What Is This Instructional Design Stuff Anyway?

This chapter will help you to:

- Discover why you need instructional design
 - Begin to see what instructional design is
 - Consider the advantages and disadvantages of instructional design
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.....**T**here is an old saying that if you don't know where you are going, any road will get you there. This is a fine philosophy if you are spending the summer between your junior and senior year “experiencing” Europe or if you have embarked on an Australian “walk-about,” but when you are developing training programs it leaves a lot to be desired.

One purpose of instructional design is to provide both an appropriate destination and the right road to get you there, whenever you are responsible for creating a training program. Your destination is usually some form of learning that your trainees will accomplish; the road is one of the many paths that instruction can follow to facilitate that learning.

Instructional design, stripped to its basics, is simply a process for helping you to create effective training in an efficient manner. It is a system—perhaps more accurately a number of systems—that helps you ask the right questions, make the right decisions, and produce a product that is as useful and useable as your situation requires and allows.

Some people refer to instructional design as the “science” of instruction because it follows a set of theories and methods and is concerned with inputs and outputs. Other people see instructional design as an “art” because the best designs usually have a direct relationship to the creativity and talent of the

designer. Still others see it as “a good thing to do if we have the time,” but stress that it can’t get in the way of producing the training.

How you see instructional design is up to you. In this book we will not champion one view over another, or even one definition as the most correct. What we will do is try to convince you that creating a training program without using instructional design principles is inviting failure. Once you are (we hope) convinced, we will explore the most basic of those principles, not from a theoretical point of view but rather from the direction of how to apply them, rapidly and successfully. In fact, if you are seeking instructional design theory you’ve probably come to the wrong source; you may want to read Dick and Carey’s *The Systematic Design of Instruction* (2004).

One of those basic instructional design principles we will explore is to *know your target audience*. This book’s target audiences were described in the introduction. Primarily, they are individuals with little to no instructional design experience who need to learn to do it right, but fast. For the most part you are not permanent training professionals planning to make a career out of instructional design, so the theory is not as important as the actual practice.

Our audience analysis (we’ll be talking a lot more about analysis in the next couple of chapters) tells us that you are much more preoccupied with *how* it is done than with what is behind the doing. Not that you aren’t interested in the theory, but you just don’t have the time to explore these aspects when everyone is expecting your training program yesterday. So terms such as *adult learning theory*, *learning styles*, and even *cognitive science* may appear here from time to time, but we won’t be discussing them in any detail. We will spend most of our time considering how to apply good instructional design principles, specifically to the various ways you can deliver training, such as classroom training, on-the-job training, self-instruction, and technology-based training.

However, for the more experienced practitioner, we’ll also discuss ways to speed up the instructional design process through simple hints and larger-scale methods, such as instructional design software, learning object-based design, rapid prototyping, and performance-support-based design. If you are an experienced instructional designer, or plan to be one someday, you might want to at least check out the shortcut icons and hang around for Chapter Eight to pick up some new ideas and shortcuts.

WHY INSTRUCTIONAL DESIGN?

So why should you concern yourself with instructional design? Perhaps the best reason I can give is one we’ve all experienced: the course, class, seminar, or other training event that sounded good on paper, but that you left (and that left you) wondering why you ever came. There are a number of reasons for this

universal phenomena, but in the end they all boil down to one cause: *poor instructional design*. Did the class not meet the objectives stated in the course description? Poor instructional design. Did the test at the end of the program not make any sense? Poor instructional design. Did the instructor meander from topic to topic with no clear pattern to what was being discussed? Poor instructional design. Was the material over your head, or too basic? Blame it on poor instructional design. (OK, I admit there may be other reasons as well, but poor instructional design is often the most critical reason, and because this is a book on how to become a better instructional designer, allow me just a little overstatement.)

On an individual basis, these ineffective learning experiences are annoying, but when considered for a company-wide training course they are rather painful, particularly to the bottom line. Multiplied by five or a dozen or fifty training courses, they are appalling. Hundreds of thousands of precious training hours are wasted every year telling participants what they already know or things they cannot use. The cost in wasted time, wasted money, and wasted opportunities is staggering—all because the person responsible for the program did not know, or did not take advantage of, a few mostly commonsense rules for creating good training.

What instructional design will do for you, the training course developer, is help you guard against making such mistakes. It will help you create good, clear objectives for your program that can be understood and mastered by your trainees. It will help you develop evaluations that truly test for the knowledge and skills that your objectives are based on. It will help you or whoever instructs the course to facilitate the participants' learning effectively and efficiently, and, most important, it will help you make sure that what is in your program is what your trainees need to learn. This reduces wasted time, wasted money, and wasted opportunities for helping to develop more effective employees who, through their knowledge and skills, increase corporate profitability.

WHAT IS INSTRUCTIONAL DESIGN?

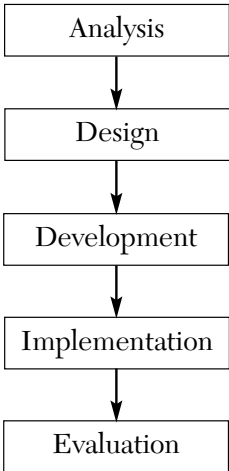
Earlier we discussed instructional design in generalities: a science, an art, a way to create training. These are all fine concepts, and perhaps good definitions, but instructional design is really a *set of rules*—or *procedures*, you could say—for creating training that does what it is supposed to do. Some of those procedures have to do with finding out *what* the training is supposed to do (you might call it determining the goals of the training); other procedures deal with letting the participant know what those goals are. Still other procedures ensure that everything in the training focuses on those goals, and one more set monitors how we know that the goals have been achieved.

Instructional design is a way to plan your training program from the moment you have the idea for it (or the idea is given to you) until the moment you complete your revisions of your first effort and get ready to run the program again. It is a working model that you can use to manage the concepts and tasks that are part of a successful training process.

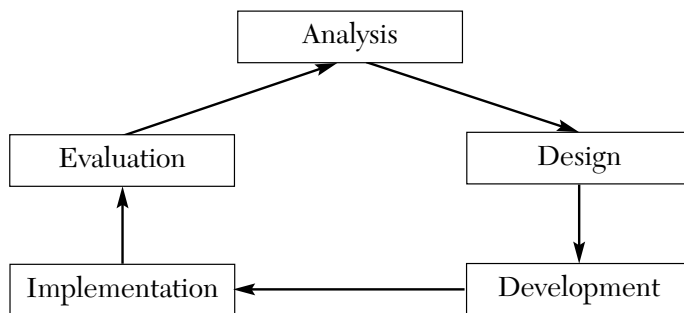
There are many ways to do instructional design—probably about as many as there are good instructional designers—but each way follows the same basic principles, and it's those principles that we will explore here. No matter whether you are training technicians, service workers, or managers, or if you will be utilizing classes, on-the-job training, e-learning, or satellites, you will need to use these principles in one form or another to make your training a success.

Those principles were developed by the military in the 1940s, and set down as a method of instructional design called Instructional Systems Design or ISD. The following graphic depicts the straight-line ISD model with its five phases: analysis, design, development, implementation, and evaluation.

As time went on, designers began to realize that although the phases were a pretty good representation of how instructional design worked, the straight-line model with a beginning and an end was not realistic. Evaluation usually led to more analysis, which created the need for redesign, and so on. So we began to look at an cyclic ISD model, like this:

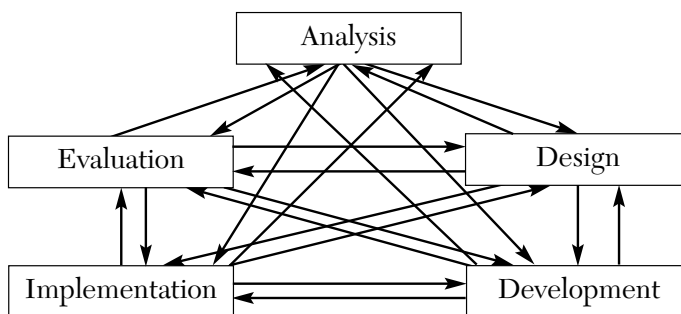


Instructional Systems Design Straight-Line Model.



Instructional Systems Design Cyclic Model.

However, to confuse you a bit, and because it mirrors the reality of ISD as an iterative process in which we keep making and remaking decisions all through the five phases as we create our design, I offer you my rendition of the ISD model.



Instructional Systems Design Spiderweb Model.

I affectionately refer to this as the ISD spiderweb model, and I challenge you that if you can recite an instance for each of the arrows in which you would move from one phase to the other, then you probably don't need to continue reading this book.

In the final analysis, instructional design requires only specific behavioral outcomes, a way to measure them, and reviews and revision to make sure the training effectively covers the outcomes. Everything else is just icing on the cake—though as all of us with a sweet tooth know, the icing is what makes the cake.

A FEW DEFINITIONS

Before we get into the advantages of instructional design, we'd better take some time to develop a couple of definitions. An *instructor* (as we'll use the term in this book) is the person who stands up in front of a class or a person and performs the main role of disseminator of content information. There is obviously a lot more to training than just that, and—as we all know from sad experience—there are instructors, and then there are INSTRUCTORS, but for now let's just leave it there.

The term *facilitator* is also meant to describe an individual who stands up before others in a training setting, but one whose main role is to assist in helping them to learn rather than to disseminate content information. This is not to say that an instructor doesn't assist in learning, or that facilitators don't provide content information at times, but these aren't their main responsibilities. Lectures are given by instructors; classroom simulation or role-play activities are expedited by facilitators. Instructors almost always have to be content experts; facilitators do not.

We'll use the term *facilitator* often in this book, as this is the role a good designer tries to design for, even if he or she throws some instruction into the mix. We'll use the term *trainer* to mean a facilitator as well. For example, an on-the-job training (OJT) trainer for our purposes will be basically a facilitator, even though he or she may occasionally provide some content information.

A *designer* is the person who puts the training together for the instructor, facilitator, trainer, or whomever. Often the designer is also the trainer; just as often he or she is not. If the designer is the trainer, this makes instructional design simpler and more treacherous, as trainer-designers tend to take a lot of liberties with the instructional design process, knowing they can deal with any shortcomings on the fly during the class. If the trainer and designer are not the same person, then instructional design is more difficult, but normally less inconsistent, as the designer needs to spell everything out in detail for the trainer if the training is to be done right.

The designer's function can be broken down into lots of subfunctions—such as material developer, evaluator, writer, artist, and so on—many of which theorists would argue have nothing to do with “true” design. However, as I mentioned earlier, we will not deal much with theory in this book, so for simplicity's sake we'll group all these functions under the designer role.

Another role is that of *subject-matter expert* or SME. As the name suggests, an SME is a person who, mainly through experience, knows a lot about the content to be taught. A designer will team with an SME to help in the development of content and for review purposes. A trainer or facilitator may consult an SME concerning thorny issues in the content, or just to get some good ideas to use during the class, some “examples from the trenches.”

In far too many cases in training, people who are SMEs are given the role of designer or trainer or both, simply because they are SMEs. They may know little about how to put a training together—and even less about how to run an effective training class—but because they have expertise in how to do the job, they're elected, appointed, or volunteered. They usually teach what they think is important (and it often is, although it may not be everything needed or important for this particular audience). They tend to teach it the way they have been taught, or the way they are most comfortable learning (which may be wrong, or at least not effective, for the content or the audience). In other words, they are very often not practitioners of good instructional design.

If you find yourself in this predicament, please don't feel that we are criticizing you. We are definitely criticizing the people who put you there, but it certainly isn't your fault that you've been told to do something you have not been trained to do. No one would ask you to drive a bulldozer or fly an airplane without the proper training, but this does not hold true for training. Books such as this one can help SMEs become good designers, and there are other books

that will make them better facilitators. (See Bob Pike's *Creative Training Techniques*, 1994.) But SMEs are *subject-matter experts*, and that does not make them facilitators or designers.

If you are in this circumstance, take heart. As the old saying goes (slightly paraphrased), "The fact that you are here and recognize that you have a problem means the situation is not beyond hope." An advantage of instructional design is that it can help make SMEs good designers.

ADVANTAGES OF INSTRUCTIONAL DESIGN

Now, on to advantages. The main advantage of instructional design is simple: it assists you in correctly doing what you need to do. In the case of developing a training program, this means creating training that helps your trainees learn the things they need to know. This sounds pretty obvious, but that doesn't mean it always happens.

When developing training, the trainer—who is often charged with designing the training as well—frequently makes the decisions as to what the trainees need to know, based on the trainer's experience and the amount of time the trainer has been given to deliver the training. These may be accurate guesses or not, but invariably in such an approach some aspects—at times critical ones—are missed or deleted due to time constraints. The advantage of instructional design is that it does not rely on one person's concept of what the trainees need to know, so it is more likely that the final product will be the right one.

We can take this advantage even further when we consider not just what is in a program (often called the *content*), but also the program itself and the other programs that make up a training curriculum. Someone must decide who needs to take what courses and how many of them. Instructional design procedures make this overall decision more systematic and thus more accurate.



Cost Effectiveness

Ensuring cost-effective training is another advantage of using instructional design. One way it does this is obvious. If you are training people in what they really need to know, and not just what someone thinks they need to know, then you are wasting less training time—and in this case time truly is money.

It costs a lot of money to run training programs. Some estimates put the cost of private training in the United States alone at over \$58 billion a year! You need money to pay trainers, for classroom space, and for materials and equipment. You also need to pay trainees to be at the training, and often you must hire other people to replace them while they are away. There are travel costs, food costs, and a number of other specific cost issues, depending on your particular company. If following proper instructional design principles can save

even 10 percent of these expenditures (and often the savings are much, much more dramatic), the effect on the bottom line of an organization can be quite significant.

And you can add on to all of these direct costs what I consider to be a major hidden cost of poor training: *lost productivity*. Workers who are poorly trained make mistakes, create scrap, lose customers, and get in accidents. Workers who are not well trained seldom reach their potential, costing the company untold dollars in possible profits.

Instructional design won't solve all your cost, productivity, and profitability problems, but it will give you a fighting chance by helping to ensure that the workforce at least knows what it is supposed to do and how to do it.

Time Effectiveness

Instructional design can also help your training become more time effective. We've already mentioned the main way it does this—simply through providing training that meets the right needs of the right people, thus not wasting their time or the trainer's. But it can do more than that. Instructional design also helps you provide training when it is needed and in a way that the trainees can best use it.

The antithesis of this aspect of instructional design is the old “Everyone needs training on this, so we'll run a class on it every Tuesday and Friday” training plan. Instructional design helps you to ask questions such as, “Is a class the best approach, or should we use on-the-job training or computer-based training for this material?” and “Are Tuesdays and Fridays the right days, or should it be Mondays, or should it be available when the trainees need it no matter what the day?” (a concept called *just-in-time training*).

Instructional design can also be time effective for the designer. This statement may seem to be in conflict with its major disadvantage—taking more time to do, as discussed in the next section—but we are talking absolutes here. If you absolutely do not care how effective the training is as long as it gets done, then instructional design takes longer than just having someone get up before a group and talk. However, if you want absolutely the best training possible, then instructional design is a time-effective method for achieving this, and the more you use its procedures, the better you will become at them and the faster you will become at creating not just training, but the *right* training.

Instructional design also includes various shortcuts to make the designer even more time effective once he or she has mastered the basics. One of these, often termed *object-oriented learning*, allows you to create a segment of training once, but use it over and over again in a number of different programs and training situations. This may sound pretty simple, but unless you follow good

instructional design procedures you will find that this concept will not work well, if at all.

Another shortcut is the use of template-based instructional design software to help you design. Knowing instructional design to begin with makes the use of these programs easier and more effective. We will discuss both of these concepts, as well as some other instructional design shortcuts, in Chapter Eight.

Learning Effectiveness

Now I know that this sounds like some of that theory we said we weren't getting into, but it really isn't. Learning effectiveness relates to some of the time-effectiveness processes we discussed earlier. An advantage of using instructional design is that it helps you choose the most effective way to present your content, which can be translated as the easiest way for the trainees to learn it.

We've all attended training during which the instructor delivered hour after hour of content on a process that, if they had just let us sit down and work, we could have learned in half the time. Instructional design helps you look at what is to be learned and decide the best method for learning it. Instead of a classroom, it might be a laboratory, or a simulation, or even a piece of virtual reality training—or no training at all, but simply a job aid that can be used back on the job when the trainee is actually performing the task.

This is what learning effectiveness is about: determining the best way for the trainee to learn, based on what content needs to be learned and what the trainee will be doing with the new knowledge after the learning is done.

Training Effectiveness Evaluation

We've been discussing the advantages of instructional design based on its various types of effectiveness: cost, time, and learning. Another advantage is that you can use instructional design to create a valid and useful evaluation of the training itself and therefore determine whether your training was truly effective. Most training evaluations, particularly those that are not based on instructional design, consider evaluation to be limited to finding out whether the trainees liked the course. A few even go so far as to ask the trainees if they feel they "got something" from it.

Through the use of instructional design procedures, you will create objectives for the course that you can use as the basis of evaluation, determining which objectives the trainees have met. Because instructional design bases these objectives on job tasks or competencies, you can relate your training to the job requirements and then evaluate whether the trainees are using what

they've learned. Another set of instructional design procedures helps you consider whether the training is worth doing at all—that is, whether the benefits of the training outweigh the costs. Using this information, you can evaluate your training even further, analyzing whether it lived up to its cost-benefit expectations. However, if proper instructional design procedures are not used when the training is created, all of these processes are less useful, harder to measure, and often not particularly valid.



Competitive Advantage

Other advantages of instructional design are related to the fact that some organizations consider good training to be a competitive advantage. An industry in which this seems to be a golden rule is information technology. The best companies, often characterized as those with exemplary training, are constantly having their trained people “pirated” by other companies. These top companies will use the promise of more training, leading to further job skill development and possible promotion, to keep their people in-house and to attract new employees as well.

I know of one old-line manufacturing company that began a franchising venture. When asked why they felt their franchise was more valuable than their competitor's, they replied, “Our name recognition, our reputation for quality, and our training system, which will guarantee that both of these other advantages remain intact for the franchisee.” Did someone say, “Sounds like instructional design at work?” Good!



Business Integration

Using instructional design also creates training that is related to the goals and objectives of the organization. This is begun early in the instructional design process and follows through to how the training is evaluated. It means that the training received by your trainees not only will help them, but also will help your company achieve its vision and the goals related to it.



Consistency

The last set of advantages in using instructional design relate to consistency. With instructional design, the quality of your training is consistent. All of your programs will be at the level of quality that your instructional design procedures dictate.

Your programs will also be consistent over time and place. No longer will one trainer teach one set of content for a program while another, six months

later or six thousand miles away, teaches something different. This consistency will create even greater quality, not only in your training, but in whatever the training helps your company to do.



DISADVANTAGES OF INSTRUCTIONAL DESIGN

We've already mentioned the major disadvantage of instructional design: that it takes time. It takes time to learn how to follow the instructional design procedures and time to implement them when you create training. However, if you consider the alternative of producing possibly (perhaps probably) ineffective training if you don't use instructional design, then this disadvantage may be less critical than it first appears.

Sure, that's easy for me to say, sitting here writing this book. I'm not out there with you, being told by your supervisor that the training is needed yesterday, being asked by the department manager why you need to talk to all those busy people before the "classes start," being second-guessed as to why you can't simply use the company's "all-knowing" SME by putting him in front of a classroom. Well, nobody said the job was easy—or if they did, it's because they never tried it themselves. Remember the old saying: You can only have two of these three: fast, cheap, good.

I have no magic answer to the problem of time. Let's face it, if it wasn't more difficult and time-consuming to use instructional design, we'd all be using it already, and I'd have to find a new topic for this book. Who can argue with what instructional design does, except from the point of view that it takes so long to do it? I'm reminded of a boss I had early in my career who really believed in instructional design, but became so frustrated one day that he looked at me and said, "It really does take too long to do things right."

There are days when I think he may have been right, but then I remember that it is better to spend one person's time now than to waste ten people's time later. Yes, it does take longer to use instructional design to do it right, but it's worth it.

Resources

A much less significant disadvantage of instructional design is that it takes more and varied resources to accomplish. Unlike what we might call *SME-based training*, in which only one person is involved in construction, delivery, evaluation, and everything else that may need doing, good instructional design requires a number of resources. These might include a designer; an instructor who may be different from the designer; an SME, if the designer is not the one to provide content and review; other reviewers; target audience members to analyze; job incumbents to talk to; and the list goes on and on. Fortunately,

none of these resources, with the exception of the first two or three, are required to contribute a lot of their time to the instructional design process. For them it may be an hour or two—or at most a day. Yet what they do contribute, when used properly, can multiply the effectiveness of the training considerably.

Another consideration in balancing this disadvantage around resource utilization is that instructional design can often save your resources. For example, if your best manager spends three days a month every month teaching his or her management specialty to new managers, those are days the manager is not doing what he or she does best: managing. One process of instructional design is to look at situations like this and ask whether there isn't a way to make more effective use of that manager's time. One answer might be to put him or her on video or in a multimedia program, or to possibly cut back the classes to once a month through the use of a distance-learning technology. This is the type of thing instructional design helps you do.

You may not find an efficiency in every situation, and the use of resources may far outweigh the little you save, but don't lose track of what instructional design provides in the end for the use of resources: the most effective and efficient training you can create, and savings that can be extraordinary.

Overcoming Disadvantages

I mentioned earlier that I don't have a magic answer to the disadvantages of instructional design; and notwithstanding the claims of "true believers" concerning the virtues of their pet technologies, from the days of film strips to today's web-based training, I don't think there is one magic answer. What this book *will* do for you is twofold. First, to decrease your learning time, it will present instructional design with practically none of the theory at its foundation. That's not to say that the theory isn't important (it is) or that you wouldn't be a better designer if you knew it (you would). It is simply a response to the fact that you are pressed for time, particularly if designing training is not your main job function, and that you can be a good—even an excellent—designer without the theory. This will mitigate that first disadvantage: the amount of time needed to learn instructional design.

Second, also to deal with the disadvantage of the time needed to do instructional design, this book provides you with a number of helpful hints and shortcuts to use. Some of these are contained within the chapter content; others are found at the end of the chapters in the form of checklists and ideas. Still others, of a more general nature, make up the entire last chapter (Chapter Ten). To start you off, here's a checklist that can help you determine whether you need instructional design at all.



CHECKLIST: DO I NEED INSTRUCTIONAL DESIGN?

Instructions: Answer each of the following questions with Yes, No, or Not Sure.

- Yes No NS I know who my trainees are and what their specific needs are.
- Yes No NS I know all the content that the trainees require from my programs.
- Yes No NS My trainees always know what is expected of them.
- Yes No NS The materials I create are exactly what the content and trainees require.
- Yes No NS I always know and use the most effective approach when delivering the required training.
- Yes No NS I know whether my trainees learned what they needed to learn.
- Yes No NS I know whether my training is being used back on the job.
- Yes No NS I always create the most cost-effective training.
- Yes No NS The training I create is always the most time effective for me and the trainees.
- Yes No NS My training is meeting the needs of my organization.
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If you answered “No” or “Not sure” to any of these questions, you can probably use some aspect of instructional design. If you answered “No” or “Not sure” to several of them, you need the whole instructional design approach. Read on, *s’il vous plaît*, and remember:

Give a man a fish and he’ll eat for a day. Teach him how to fish and he’ll eat as long as there are fish in the pool. But design a training program that helps him learn how to stock and manage his pool, and there is no telling how far he might go.

