

# The Blended Learning Book

Best Practices, Proven Methodologies,  
and Lessons Learned

Josh Bersin

**Pfeiffer**

A Wiley Imprint

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# About This Book

## Why is blended learning important?

Developing effective e-learning programs is difficult and complex. There are a dizzying number of tools, technologies, and approaches. "Blended Learning," the integration of e-learning and instructor-led approaches into a seamless program, has become a critical paradigm for training professionals. This book will help training managers, program managers, executives, and developers understand the principles, best practices, and proven methodologies for blended learning.

## What can you achieve with this book?

This book walks you through the entire process of blended learning in detail. It defines blended learning, fits blended learning into today's training environment, and describes each step in defining, budgeting, building, managing, and measuring blended learning programs.

## How is this book organized?

The book is built on six years of research into successful, innovative, and challenging blended learning programs. It walks the reader through the design, budgeting, development, and management process and is filled with real-world examples and case studies to give the reader specific best practices. Every chapter has a set of "lessons learned," which can be applied directly to the job.



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*I would like to dedicate this book to my wife, Heidi, who put up with the long nights and early mornings I spent researching, writing, and editing this manuscript. Her continual support made it possible to complete a work of this magnitude.*

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# Introduction

## Internet-Based Learning: An Adventure

Corporate learning is a fascinating subject. Amazon.com alone has more than 117,000 titles that cover training, learning, corporate education, and knowledge management. According to a study done in 2002 by KPMG (now Bearingpoint), nearly 60 percent of corporate knowledge goes out-of-date within three years. Well-run companies know that a vigorous and ongoing investment in employee training is critical to staying competitive.

Ultimately corporate training can be viewed as a business investment. I tend to use the word “training” rather than “learning” because it reinforces the point that training should deliver just enough knowledge, skills, and competencies to drive a business outcome. Unlike other forms of learning, corporate training is very pragmatic. Every dollar invested in training must somehow increase revenue or reduce cost. Although sometimes difficult to measure, these business results do occur when companies focus on the design, development, deployment, and management of excellent programs. I find in my research that it is not unusual for training programs to drive returns-on-investment of ten to one-hundred times their original investment.

Since the advent of computers in the 1960s, organizations have been trying to apply technology to the learning and training process. Technology has the potential to add scale, speed, and efficiency to training. Today’s application of technology to training is called “e-learning”—a term that implies the use of the Internet as the center

of the process. Much has been written about the potential for e-learning, with one well-known executive, John Chambers of Cisco, claiming that “e-learning will make e-mail look like a rounding error.”

This book is about the next step in this adventure: a concept called “blended learning.” Blended learning, which we will define in this chapter, integrates the use of the Internet with a rich variety of other approaches and technologies to create an integrated learning experience. Excellent blended learning programs demand a clear understanding of business goals, technology, and the way people learn. Although the concepts of blended learning are not new, the applications in today’s environment are.

### **What This Book Is About**

This book is focused on the corporate training market. In my research into the training industry, I see companies rushing headlong into e-learning wherever possible. They are buying “learning management systems” and tools, hiring consultants, going to trade shows, and reading everything they can find. They want to understand which technologies to use when—and how and when to blend them together. My goal in writing this book is to simplify this process and give you a guidebook on the principles, best practices, and lessons learned in blended learning. Much of what you will read here are “guidelines for excellence” we have uncovered by working with many pioneers in the market.

If you are a training manager, program manager, executive, or new to e-learning, this book will give you:

- An understanding of what “blended learning” means;
- A variety of blended learning models (approaches) that have been proven successful;
- A set of tips and techniques for budgeting, selecting technology, developing content, and selecting media;
- A large library of case studies and examples that you can learn from; and



- A set of “lessons learned” in every chapter that you can apply directly to your job.

As an avid practitioner and researcher, I focus on practical examples of What Works™<sup>1</sup>. Although there are many books written about instructional design and theory, this book is focused more on real-world experience. It is filled with examples. I hope that this book gives you, the individual charged with putting training resources to work, the tips, insights, and models to make your programs more effective, efficient, and easy to manage.

## Defining Blended Learning

The term “blended learning” has become such a buzzword—so that it has taken on many meanings. For the purposes of this book, we will use the following definition:

Blended learning is the combination of different training “media” (technologies, activities, and types of events) to create an optimum training program for a specific audience. The term “blended” means that traditional instructor-led training is being supplemented with other electronic formats. In the context of this book, blended learning programs use many different forms of e-learning, perhaps complemented with instructor-led training and other live formats.

In the early days of Internet-based training (only a few years ago), people rushed to put as much content as possible onto the web. Reality has set in. Web-based training alone is not appropriate or sufficient for all problems. In some cases it is a breakthrough, extending the reach of training to people never before able to attend a class. In other cases it costs thousands of dollars and sits on the virtual “shelf.” The goal of blended learning is to synthesize

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<sup>1</sup>WhatWorks in e-learning is a trademark of Bersin & Associates.

training media into an integrated mix—one you can tailor to create a high impact, efficient, and exciting training program.

### **The e-Learning Evolution: From Novelty to Reality**

e-Learning has become a very big business. According to the latest statistics from International Data Corporation, in 2003 the e-learning market reached more than \$15 billion in products and services. Corporations report that more than 16 percent of all corporate training is now conducted through technology (*Training Magazine Industry Survey*, November, 2003). Hundreds of universities and for-profit educational institutions offer web-based offerings that supplement, complement, or replace traditional classroom offerings.

As this growth occurs, however, a realization is taking place. The big savings in travel and instructor costs are largely over. It is no longer enough to “put our content on the web” to save money and reach more people. Corporations are flooded with electronic content. Many workers complain that they do not have the time to take hours and hours of online training. In e-learning there is no coffee, no donuts, and no fellow student to chat with while you get away from work.

According to a recent study we completed with more than 1,200 training managers, the biggest challenge companies still face is “getting learners to take online courses” (Bersin & Associates study, Summer 2003).<sup>2</sup> Over and over again companies build or

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<sup>2</sup>Study conducted through online survey to more than 8,000 corporate training professionals in June of 2003, 1,214 respondents. The two biggest challenges companies face are (1) “It takes too long to build courses” and (2) “Getting learners to take courses.”

Does anyone remember Webvan? For a few brief years, many of us in Silicon Valley actually believed that all shopping was going to be done online. Just as we now know that not all shopping is done on the web, we also know that “not all learning will be done on the web.”

Training organizations now have many different delivery options, each of which provides a different experience. Sometimes instructor-led training is the most effective approach. The art of e-learning is not the content itself, but building the best mix to optimize the problem at hand. The power is in the “blend.”

buy e-learning courses expecting massive enrollments, only to find that the biggest trick is getting people to enroll, engage, and complete.

### Why e-Learning Often Fails

Many e-learning programs do fail. In the early days of e-learning, programs suffered from dropout rates of 60 percent and higher. Any program that does not achieve its desired level of enrollment, completion, and business impact is a failure. I frequently talk with companies faced with this situation.

Why do failures occur? There are many reasons, and we walk through most of them in this book. One of the biggest problems is the paradigm itself. Workers today are busy doing their jobs, reading e-mail, and going to meetings. Unlike traditional training, e-learning is very easy to “opt out of.” There is no “getting away from the office” to join an e-learning course. There is no “class” to chat with. It is very easy to disengage.

Even worse, Internet-based content is often boring, slow, and buggy. Many off-the-shelf courses are nothing more than pages of text with a few colorful graphics. We are asking people to squeeze this activity into an already overcrowded day of work, meetings, e-mail, family obligations, and commuting. The following quotes illustrate this point well.

“The concept of ‘build it and they will come’ does not work. We have to continually market, evangelize, and promote our programs to remind people to complete the programs they have started.” (Ceridian, 2003)

“We tried e-learning alone . . . our e-learning programs simply did not take off. Learners repeatedly told us that they were too busy and could not take the time during the day to focus on our web-based courseware. We found that blending was the only way to move forward from ‘awareness’ to proficiency and mastery.” (Large U.S. Insurance Company, 2003)

Blended learning solves these problems.

## **The Challenge: Defining the Blend**

But how do you create the right blend? In corporate training every program has a slightly different strategy, goal, and audience. No single model or blend of media fits all. There are some basic guidelines (for example, sales training should include scenario-based exercises and practice sales calls), but the right blend depends on many criteria. These include business strategy, program type, audience, budget, resources, content stability, content duration, and technology infrastructure available. One of the goals of this book is to introduce you to these criteria so you can select the right blend more easily.

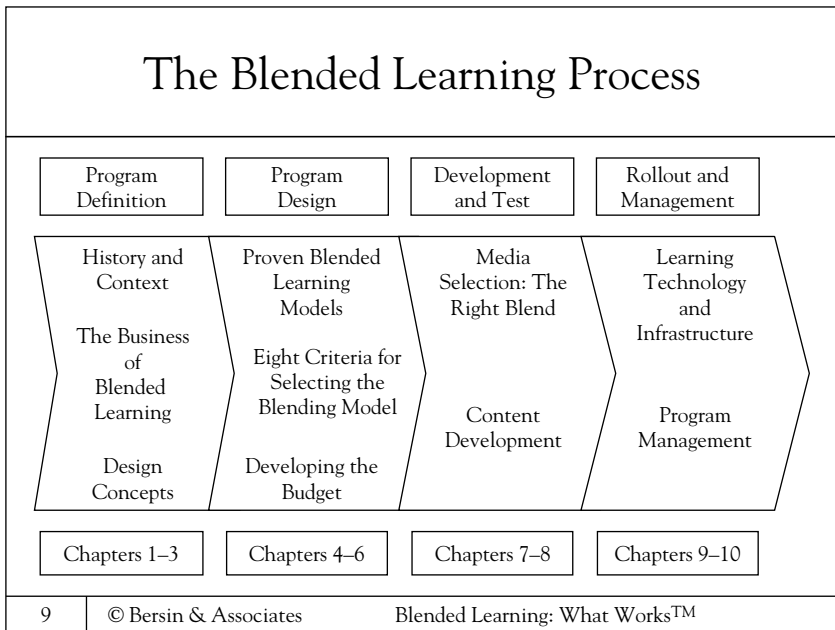
The other challenge in defining the blend is deciding what media types to use. We discuss sixteen different media types in the book, shown in Table I.1. Each of these media types has its own special strengths and weaknesses, and we will review these in detail in Chapter 7: Media Selection.

## **Focus on Practical Experience**

After nearly five years of research into dozens of blended programs, I am still amazed at the innovations I see in real-world experience. Although instructional design and learning theory are important, best practices come from experience. In this book I take this experience and translate it into useful lessons to show you how to use blended learning for your particular situation. The book will introduce you to models, best practices, issues, technologies, and methodologies that have been proven effective. It will give you lots of examples. And best of all, it will give you the insights that others have learned by developing and launching programs of their own—learning along the way.

## **This Book: A Proven Approach**

This book was written to give you an overall approach to blended learning as well as many detailed tips and techniques to make your programs effective.

**Figure I.1. The Blended Learning Process**

In Chapters 1 through 3 we will introduce you to the history, concepts, and business issues in blended learning. From there, in Chapters 4 through 6 we will show you specifically how to define a program and create a cost-justifiable budget. Once you have defined the budget, and program structure, in Chapters 7 and 8 we will walk you through the process of media selection and content development. Then in Chapters 9 and 10 we will describe the critical roles of technology and program management. These chapters give you what you need to know to launch, manage, track, and measure blended learning programs.

In each chapter we will give you detailed lessons learned, case studies, and tips you can use immediately. The Appendix includes a Glossary, details on some of our research, case studies, and job aids.

## Lessons Learned in This Chapter

1. Blended learning is the combination of training media to optimize programs for a specific problem. It is not a new concept but today's options are very new.
2. e-Learning suffers the risk of low enrollments, low completion rates, and low impact if not applied correctly. People are busy, so blended programs must motivate, incentivize, and encourage people to engage.
3. There are sixteen basic media types available in blended learning. These fall into categories of synchronous (live) and asynchronous (self-study). Your challenge is deciding when to use which and how to blend them into an optimum program.
4. The approaches to Internet-based training and blended learning are changing and evolving every day, so you must look to best practices to keep current on what works in today's environment.

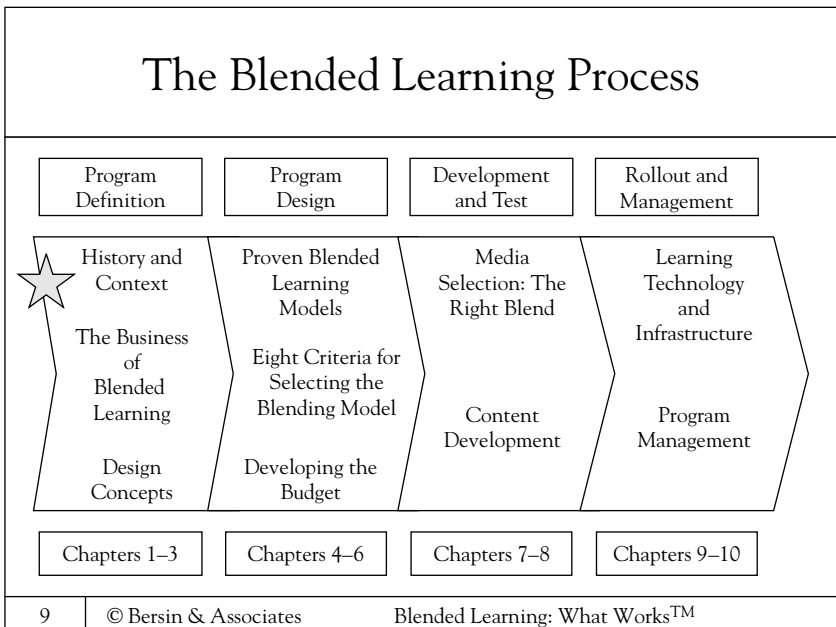
## Chapter One

# How Did We Get Here?

## The History of Blended Learning

It is important to look at blended learning in perspective. This chapter looks at the history of technology-based training (see Figure 1.1). If you are itching to get into the business of blended learning, you could choose to skip this chapter, but remember to come back and read it later. We will refer to many of these principles throughout the book.

Figure 1.1. Where We Are



## The Evolution of Technology-Based Training

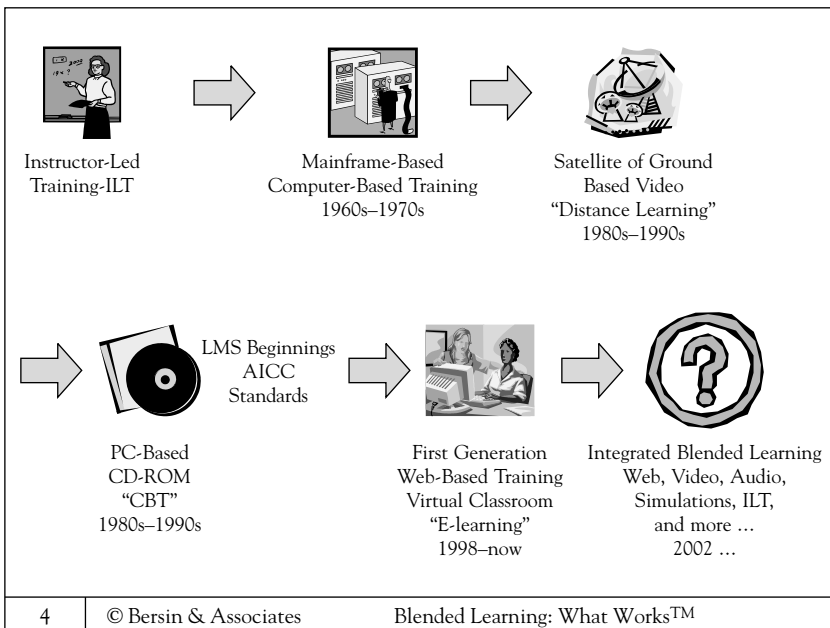
Blended learning is the latest step in a long history of technology-based training. What we describe in this book is the continuation of thirty years of experience using technology for training and education. Although this evolution is far from over, where we are today is an important place, built on several major steps and learnings in this exciting industry. This short chapter on history will prevent us from having to “relearn” what has been learned before.

In the evolutionary steps which led us to where we are today, we start with traditional instructor-led training. (See Figure 1.2.)

### Instructor-Led Training

There will always be a role for the teacher, professor, or subject-matter expert to teach and entertain us in a classroom. Instructors convey enthusiasm, expert knowledge, experience, and context.

Figure 1.2. Evolution of Technology-Based Training





They can answer questions and change the pace and direction of a class based on the audience. Even more importantly, as we have learned in e-learning, instructor-led training has a cultural effect: people interact and learn from one another.

The biggest challenge with instructor-led training is lack of scale. If you need to train thousands of students, there are only two options: large class sizes or lots of travel. Large class sizes greatly reduce effectiveness and travel is very expensive.

The second challenge with instructor-led training is long deployment times. Most business-critical training problems are time-driven. They must be accomplished within a tight deadline—and the number of hours available to learners is limited. We call these issues “deadline time” (time to complete the entire program) and “duration” (elapsed time for the program).

If a program relies on instructor-led training and has strict deadline times and limits on duration, you have a problem. You can schedule large classes (i.e., fly the entire organization to a convention center and sit them in a huge auditorium) or hire many instructors and send out to teach many classes at the same time. The large class approach (i.e., conference) has strong cultural benefits (it brings people together)—but makes one-on-one teaching and hands-on experience nearly impossible. Flying instructors all over the world is expensive and often impossible if you do not have a cadre of qualified instructors.

Technology is intended to solve these problems: extend the instructor model in space and time. Theoretically, if we use technology we can reach more learners in a shorter period of time—and as a bonus they can learn at their own pace and speed.

### **Mainframe-Based Training**

The first technology-based training approach came with mainframe and mini-computers in the 1960s and 1970s. These systems had the limitation of character-based terminals but the benefit of reaching hundreds to thousands of people at their workplace. A pioneering

example of such a system was Plato, a system developed in 1963 by Control Data and the University of Illinois. Plato pioneered the use of computers in traditional educational settings and still exists today.

As Figure 1.3 shows, mainframes were not graphical or visually interesting. Nevertheless, they provided the first platform to extend learning to large audiences through technology.

### An Example of Blended Learning

My own experience in e-learning began in the mainframe era. In the 1980s I was first hired by IBM as an entry-level sales engineer. For my first fifteen months as a “trainee” I needed to learn how to sell, implement, and support many complex mainframe hardware and software systems. IBM had developed a well-structured blended curriculum for new hires made up of online product education at the local branch office and a series of classroom and simulation exercises in Dallas, Texas.

In the branch office we used a manual (job aid) and series of online courses (self-study) to learn about the basics of online systems, networking technologies, and business principles. Every exercise we completed at the branch was scored and graded and then sent to both our manager and the sales training organization in Dallas.

Figure 1.3. Mainframe-Based Interface



When we traveled to Dallas for our next set of real-world experiences the instructors already knew how well we had done on our branch exercises.

The entire fifteen-month program was a long, simulated sales call on a company called Armstrong Sporting Goods. During the program we learned how to make a sales call on the IT manager, the CFO, the CEO, and the VP of Sales. We learned how to deal with sales objections by performing real sales calls (which were graded). The instructors in Dallas simulated their job roles and treated us exactly as we would be treated when we went out in the real world.

This program had all the elements of a well-designed blended learning program. It was well-structured (all steps were well-defined and scheduled in advance); it took advantage of best-in-class media of the day (mainframe computers); it saved us time (we were working in the branch while taking courses); it created a social culture (learners spent a lot of time together); and it used demonstration and experiential learning (we actually had to “make the sale” in order to pass the course).

The lesson here is that creating a blended program is not dependent on technology. Rather it is a process of problem identification, defining the blending model, and carefully managing and measuring program execution. These are all topics we cover in detail throughout this book.

Bottom line on mainframe based training: it was the beginning of an evolution, and despite its clear limitations in user interfaces, formed the basis for our thinking about blending technology with instructor-led training.

### **Satellite-Based Live Video**

As Figure 1.2 shows, the next step in the technology evolution came in the 1970s when companies started to use video networks to extend the live instructor. Take the problems with instructor-led

training above and use TV-based technology to extend the live experience. Learners could sit in a classroom, watch the instructor on TV, chat and interact with other students, and even ask the instructor questions.

A well-run example of this approach is the Stanford University Interactive TV network, which is still used throughout Silicon Valley. Stanford invested in a community-based video network in the 1970s and 1980s that enables Stanford professors to teach courses all over the San Francisco Bay Area without leaving the campus. The students never have to leave their workplace to learn. They submit exercises and tests via courier.

I took live video courses at Stanford and also during my time at IBM. The experience is very close to a real classroom experience. The classrooms have TV cameras that enable the instructor to see the entire class. Students can push a button to ask questions. It truly extends the classroom model into a global delivery solution.

Live video continues to be an important training approach in many companies. General Motors, for example, relies heavily on video-based instruction to train dealers. If the audience is not particularly PC-literate or does not have access to computers, live video training is very appropriate. The challenge is expense: building and maintaining video networks is costly and this approach is rapidly being replaced by lower-cost digital IP-based systems like web-casting, web-based video, and conference calls. We learned from live video that the face, body language, and visual cues from the instructor are an important part of training programs.

## The PC CD-ROM Era

To really understand the issues we face today with blended learning it is valuable to understand the CD-ROM era, which forms the basis for much of the web-based training we see today.

In the early 1980s when the first PCs arrived, trainers and educators rushed headlong into PC multimedia technologies. Training technologists love to work on the cutting edge. Computer

companies saw this market and started to create special PC models and features designed for multimedia training. Microsoft even went so far as to create a Multimedia PC (MPC) specification.

I call this period the CD-ROM era. Vendors and training departments realized that computers could deliver graphics, sound, video, and rich interactivity. With the extensive storage media available in CD-ROM, these programs could be distributed with ease. The learning experience was rich and perhaps could completely replace the instructor-led model.

The leader in this market was a company called CBT Systems. This company is one of the only major players that successfully made the transition from CD to the web. CBT Systems was the largest provider of CD-ROM training for software and IT professionals. As the CD market started to wane, the company adopted a new web-based approach and relaunched itself as SmartForce around 1999 and then later merged with Skillsoft in 2002. They realized that the CD-ROM era was giving way to new approaches that leverage the web.

It's important to realize that, in the 1980s and 1990s, when companies developed content for CD-ROM they did not use the web-centric approach we have today. They typically relied on high-quality video, complex animations, and professionally developed sound. These titles, often authored in Authorware<sup>1</sup> from Macromedia or Toolbook<sup>2</sup> from Click2Learn, were designed to use high bandwidth media—video, audio, and interactions—elements that do not always translate well to the web. Developers learned that there is a fundamental difference between content authored to run in a CD-ROM (which can house large amounts of video and audio locally) and content authored for the web (where the bandwidth to the PC may be 56k or less in some cases).

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<sup>1</sup>Authorware® from Macromedia is one of the widest used tools for development of CD-ROM courseware.

<sup>2</sup>Toolbook® from Click2Learn is one of the original and most widely used tools for CD-ROM and now web-based courseware. In 2004 Click2Learn merged with Docent and is now called Sum Total Systems.

## Development of Learning Management Systems and AICC

The limitations of CD-ROM technology formed the basis for e-learning as we know it today. The first problem people faced with CD-ROMs was how to manage all the distributed copies of courseware. Who was using it? What were they doing? How could we tell if they were completing? This problem created the need for a “learning management system” (LMS)—a piece of software somewhere on the network that could track and manage all the CD-ROM courses people were taking.

One of the biggest users of CD-ROM technology was the airline industry. Boeing, for example, developed thousands of hours of content devoted to the support and maintenance of aircraft. If the content was distributed to hundreds of PCs, how could Boeing track who was taking these courses and what levels of completion and compliance they were achieving? The answer was the first network-based LMS.

The first LMS systems were developed primarily to manage the enrollment, tracking, and completion of CD-ROM-based content across a network. For this to work, however, the industry needed some standard way for courseware to communicate with the LMS about what the learner was doing. The LMS needs to know when you start a course, what scores you achieve in certain assessments, where you leave off when you are interrupted, and how much time you spend in the course.

To solve this problem, a group of airlines developed a new standard. The Aviation Industry CBT Committee (AICC) developed the most useful and widely implemented approach to enrollment, tracking, reporting, and book-marking electronic content. AICC standards are built into almost every course and every LMS available in the marketplace today.

Today, SCORM (Sharable Content Object Reference Model), a superset of AICC, is slowly becoming the new standard for content packaging and interoperability. SCORM builds on AICC and

adds concepts such as reusability, sequencing, and searchable metadata.<sup>3</sup>

### ***“More Experience” Is Not Necessarily an “Effective Experience”***

One of the learning experiences from the CD-ROM era is that “more experience” does not necessarily result in an “effective experience.” When developers realized that they could deliver audio, video, animation, and interactivity through the computer, they rushed into complex and expensive content production.

Learning requires a combination of **content** plus **context**. Content is meaningless unless it is fit into the context of the business challenge, the learner’s abilities and background, the work environment, and the specific learning objectives. Today, this design “truth” continues to drive Internet-based media. We will discuss these issues in detail and give you guidelines to avoid building “the most wonderful course that no one takes” or “the most interesting course that teaches you nothing.”

### ***Cost of Maintenance and Deployment Emerge as Major Issues***

One of the big issues we discovered in the CD-ROM era was the enormous problems of content deployment and content maintenance. It has been estimated that over the lifetime of a course (and lifetime is a measure of “content stability,” which is discussed later), maintenance can become many times more expensive than the initial development. In the CD-ROM model, maintenance became a nightmare. With thousands of CD-ROMs distributed throughout

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<sup>3</sup>Reusability refers to the ability to use a chapter or “sharable content object” (SCO) in multiple courses. Sequencing refers to making it easy for the learner to branch from chapter to chapter without coding this logic into every course. Searchable Metadata refers to “tagging” content so it can be searched easily with tools like Google.

an organization, it was nearly impossible to replace them with new versions.

### ***Learnings from the CD-ROM Era***

Table 1.1 summarizes the lessons learned from the CD-ROM era.

Although the CD-ROM industry grew, it never reached a size greater than \$400M or so, largely due to technology limitations shown in the table. Many vendors found that high costs of developing and maintaining CD-ROMs would not sustain a profitable business. Many companies built CD-ROM programs that cost far more than their instructor-led equivalents. The trick was (and still is) to develop a highly interactive experience without going “overboard” on expensive video, authoring, and graphics that were not justified for a given application.

The industry learned extensively from this experience, and the ubiquity of the Internet—coupled with standardized PC software (Windows®)—has given us a whole new set of options. Already the web-based e-learning market is five times larger than the CD-ROM market ever was.

### **Enter Web-Based Training: The First Generation**

In the last few years some important changes have taken place. Web browsers (Internet Explorer® primarily) are ubiquitous. Network access is now relatively common. Computers are fast enough to display sound, broad ranges of color, and video.

These new technologies create a platform that solves many of the problems that plagued the CD-ROM era. Now courseware can be published in one place and easily distributed to thousands of people. The pioneers of web-based training tried to take CD-ROM content and publish it to the web. This approach did not work. CD-ROM-developed content is designed with large video and audio files and “takes over the screen” with its own user interface. When published to the web, it generally results in a slow and sluggish



**Table 1.1. Learnings from the CD-ROM Era**


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Content can be very expensive to produce.	<p>CD-ROMs were built on the concept of high interactivity, branching, and often video, and therefore took many months and often hundreds of thousands of dollars to build.</p> <p><i>Often web-based courseware still suffers from this challenge.</i></p>
Content may be difficult to update.	<p>Once cut, a CD-ROM becomes a published work, like a book. Updating it is a laborious process, so content rapidly became out-of-date.</p> <p><i>Web-based courseware solves much of this problem, but still requires a maintenance strategy. Some courses are “disposable” and we call these “Rapid e-Learning.”</i></p>
Technology was difficult to deploy.	<p>CD-ROMs required a “player”—a piece of software that ran in your PC and displayed the content. If you did not have the player, it had to be included on the CD-ROM, which made running the content more prone to errors. Your PC had to have the right sound card, video card, and screen resolution.</p> <p><i>Early Internet-based programs suffered from this problem as well, and many programs still do. PCs must have the right plug-ins, bandwidth, and hardware and software configuration.</i></p>
Multimedia was not standardized.	<p>Because early PCs did not have standard graphics, sound, or video technology, many CD-ROMs did not run correctly.</p> <p><i>In e-learning this problem has largely been resolved by Flash,* but continues to plague programs with video and some simulations.</i></p>
Tracking was difficult or impossible.	<p>Some CD-ROMs had tracking, but many did not, so they were essentially books you perused at your own pace. Technology for tracking and reporting was not standardized until very recently (AICC**).</p> <p><i>Today, thanks largely to this standard, it is fairly easy to track electronic content. However, we always recommend testing this interoperability, because the “standards” are simply reference guides and are often implemented differently among different vendors.</i></p>

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\*Flash, from Macromedia, is one of the widest used technologies for deployment of highly interactive content.

\*\*AICC, the Aviation Industry CBT Committee, developed one of the most widely used standards for tracking and launching electronic courseware today. It is still the most used learning management system to launch and track learning courseware.

experience. The tools used for CD-ROM content (Authorware, as an example) were not designed to edit HTML and other technologies used on the web.

We now know that web-based training is new and different. It uses HTML and browser-based technologies like Flash<sup>®</sup>. It usually runs within a portal or an online learning environment. It leverages the power of search and linking, which is unique to the Internet.

### **Today: A Wide Range of Options**

This brings us to where we are today. Today training organizations have a wide range of options for blended learning. Self-study (asynchronous) options include web-based courseware, simulations, EPSS systems, books, and job aids. Live (synchronous) options include webcasting, live video, conference calls, and instructor-led training. The key issues we discuss in this book are deciding which to use when and how to blend them together to solve a particular business problem.

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### **Lessons Learned in This Chapter**

1. Blended learning is not a new concept, but the tools available to us today are new.
2. The origins of blended learning are the simple but powerful desire to extend the classroom “people-centric” experience in space and time.
3. Blended learning can be accomplished through any variety of media, whether it is mainframe-based, video-based, or web-based. The key issue is not making the technology exciting but fitting technology seamlessly into a program appropriate for the problem at hand.
4. CD-ROM-developed media, while important in today’s world, is authored differently from web-based media. It is

difficult if not impossible to use the same content for both delivery technologies. Web content can be distributed on a CD-ROM, but content authored for CD-ROM rarely works well in web delivery.

5. The web as a delivery and learning platform is new. It uses new tools and approaches which build from the CD-ROM world but are also dramatically different.
6. The history of technology-based training teaches us that problems such as appropriate content development, content maintenance, deployment, and distribution are critical in any program.
7. Standards like AICC provide excellent ways of tracking student progress. They were developed to track content usage and completion and are now embedded into most commercial LMS systems. SCORM, the latest specifications for tracking and content structure, builds on the principles of AICC.
8. Today's blended learning approaches build on years of experience but apply new technologies and delivery options that will continue to change.