



## FAQS

### Frequently Asked Questions About Web-based Training

#### What is Web-based training?

Web based training (WBT) is instruction that is delivered over the Internet or over a company's intranet. The training is accessed using a Web browser, such as Netscape Navigator. Other types of Internet training refer to any program that can be delivered from a remote source, even e-mail correspondence courses, or the transfer of files of course materials. Training over the World Wide Web, and training using an intranet's Web, specifically refers to the readily available, interactive, multimedia nature of Web browsers and associated plug-ins.

#### Where can Web-based training be delivered?

To any computer – anywhere – that can access the Internet or a company intranet. This includes a desktop at work, field service engineers on the road, and telecommuters at home.

#### What are the advantages of Web-based training?

The technology is cross platform. Unlike other forms of computer-based training, Web-based training can be accessed by Windows, Mac, or UNIX users, usually without requiring additional software. You author the training program once, and deliver it to any machine over the Internet or your intranet.

#### Widely available Internet connections and browsers.

Most computer users have access to a browser such as Netscape Navigator and are connect to a company's intranet or have access to the Internet. Accessing Web-based training doesn't require much more than that.

#### Flexibility, accessibility, convenience.

Users can proceed through a training program "at their own pace and at their own place." They can also access the training at the time of need, and only as much as they need, known as "Just in time and just enough."

#### Cost savings and time savings.

Because the Internet can be accessed from any location, there are no travel costs for bringing remote employees to a centralised workshop. And, as indicated in my report "Return on Investment and Multimedia Training" (1995, Multimedia and Internet Training Newsletter), since the actual time required for training by computer averages about 50 per cent that of instructor-led training, additional cost savings are realised.

#### Inexpensive worldwide distribution.

Web-based training can be accessed from any computer anywhere in the world, greatly reducing the distribution costs associated with training in other media.





### **Ease of update.**

If changes need to be made in the program after the original implementation, they can be made on the server which stores the program and everyone worldwide can access the update. Courses can be designed to access designated current information, such as the latest new product specifications, from any other server worldwide for on-the-fly update whenever anyone accesses the program.

### **What are the disadvantages of Web-based training?**

#### **Bandwidth is limited.**

Limited bandwidth means slower performance for sound, video, and even extensive graphics. These restrictions can cause long waits for download and can adversely affect the learning process. The problem can be serious over the public Internet where more traffic jams occur, but is less severe on a company's intranet, which usually has greater bandwidth.

#### **Are computers replacing human contact?**

There's a general concern that as we move toward more computer usage, a glowing terminal replaces a friendly face. Decreasing instructor-led training makes some trainees uneasy.

#### **Today's Web-based training programs are sometimes too static.**

As an emerging technology, the level of interactivity in Web-based training is too often limited. This is gradually improving, and as it does the impact of the training on performance also improves.

#### **Web-based training takes more time and more money to develop than expected.**

Like any first-time challenge, learning about and implementing new technology takes more resources (and more aspirin) than expected. You can make it easier by starting with a simple program and building on success.

#### **Not all courses should be delivered by computer.**

Some training topics are not best served by computer-based training and require a more personal touch. Team-building activities and dealing with emotional issues such as down-sizing come to mind.

#### **Why did you choose to call it Web-based training?**

Web-based training and Internet-based training are the two most widely used and widely understood terms for this type of training. We conducted a survey of readers of the Multimedia and Internet Training Newsletter as well as the subscribers to our discussion-based mailing list, WEBTRAINING-L, to see which term people were using most often. There was no clear first choice and both terms are likely to remain popular. As technology evolves, so does terminology.

#### **What is multimedia training?**

Multimedia training is a type of computer-based training that uses two or more media, including text, graphics, animation, audio (sound/music), and video. In practice, multimedia uses as many of these media as is practical to produce a colourful, engaging program, delivered via the computer. A typical program allows users to control their progress and pace through the course so everyone can learn at his or her own speed. A catch-phrase that reflects this impact is, "With Computer-based training, we captured their heads; with multimedia we capture their hearts."



### **What are some other terms and technologies used for training?**

#### **Computer based Training (CBT).**

An all-encompassing term used to describe any computer-delivered training including CD-ROM and the World Wide Web. Some people use the term CBT to refer only to old-time text-only training.

#### **Distance learning.**

In its most common historical form, this refers to a broadcast of a lecture to distant locations, usually through video presentations.

#### **Desktop training.**

Any training delivered by computer at one's desk.

#### **Desktop video conferencing.**

A real-time conference using live pictures among two or more people on a network who communicate via computer.

#### **Interactive training.**

An umbrella term that includes both computer-based and multimedia training.

#### **Computer-assisted instruction.**

A term used more commonly in education for any instruction where a computer is used as a learning tool.

#### **Self-paced training.**

Training which is taken at a time and a pace determined by the user (kind of like reading a book). Used historically for text or audio/video self-study courses, the term is used by some organizations now to include computer-based, web-based, and multimedia training.

### **What are other related terms for delivering training over a network?**

There are other terms for remote access training, including Internet-based training, intranet-based training, online training and net-based training.

#### **Internet-based training.**

Any training that can be accessed over the Internet. Usually this is done with the World Wide Web, but e-mail correspondence courses and file transfers also fall into this category.

#### **Intranet-based training.**

Training based on a company's internal network. Web browsers are used to access company pages, but they are only accessible within the company.

#### **Online training.**

An all-encompassing term that refers to any training done with a computer over a network, including a company's intranet, the company's local area network, and the Internet.

#### **Net-based training.**

Same as online training.



### **What is driving the interest in Web-based training?**

New demands in organizations are increasing the interest in Web-based training on a daily basis. The need for less expensive ways to deliver training has led many companies to explore the option of Web-based training. The convenience for users of the programs – at their own pace, at their own place – and the engaging nature of the multimedia delivery are big advantages. The centralised nature of Web-delivered training makes the deliver standardised for all users who take the course. Web-based training is often less expensive and more convenient than the alternatives. Web-based training is a fascinating new field, which will likely have a vast impact on all professionals in the filed. And it's fun to use and develop for, too.

### **Is this a medium worth investing in?**

Yes. More and more information services and programs within organizations are moving to the World Wide Web. The Web can provide the most efficient delivery of information because of its ability to be accessible from anywhere, anytime, and to disseminate a standardised, updateable version to multiple users. With careful attention to instruction design during the development phase, Web training can be a valuable addition to your company's training and performance support offerings.

The Web and Web technologies have already had a major impact on the way businesses communicate, but this is a dynamic medium and many more changes are in store.

### **How can I justify investing in Web-based training?**

People may be wary of new technology, but significant cost savings have a way of catching management's attention. Lower training costs result from the reduction in time and resources for delivery, especially through eliminating the cost of travelling to distant learning sites.

How can I determine whether Web-based training is right for our organization?

There are several questions you can use to assess the viability of web-based training for your company:

- Will management support the effort?
- Are there enough potential users to justify the cost of purchase or development?
- Does the target audience use, or can they learn to use a computer?
- Will users accept a Web-based program?
- Will users learn from this particular program?
- Does the program provide a method of instruction that is easier, faster, cheaper, safer, or more engaging than the alternative?

### **What criteria should be used in evaluating Web-based training?**

Here are ten criteria we use in judging for the semiannual Multimedia and Internet Training Awards:

#### **Content.**

Does the program include the right amount and quality of information?



#### **Instructional Design.**

Is the course designed in such a way that users will actually learn?

#### **Interactivity.**

Are users engaged through the opportunity for their input?

#### **Navigation.**

Can users determine their own way through the program? Is there an exit option available? Is there a course map accessible? Is there an appropriate use of icons and/or clear labels so that users don't have to read excessively to determine program options?

#### **Motivational Components.**

Does the program engage users through novelty, humour, game elements, testing, adventure, unique content, surprise elements and so on?

#### **Use of Media.**

Does the program appropriately and effectively employ graphics, animation, music, sound and video? Is the gratuitous use of these media avoided?

#### **Evaluation.**

Is there some type of evaluation, such as completion of a simulation? Is mastery of each section's content required before proceeding to later sections? Are section quizzes used? Is there a final exam?

#### **Aesthetics.**

Is the program attractive and appealing to the eye and ear?

#### **Record Keeping.**

Is student performance data recorded, such as time to complete, question analyses, and final scores? Is the data forwarded to the course manager automatically?

#### **Tone.**

Is the program designed for its audience? Does it avoid being condescending, trite, pedantic, and so on?

#### **What is the difference between the World Wide Web and the Internet?**

The Internet includes all electronic transmissions, including e-mail, file transfers, and the Web. The Web is just one part of the Internet, but it is the fastest growing, most promising part, especially where training is concerned.

#### **What about the overall impact of the Internet?**

Someone pretty bright put it well: "The Internet is being overhyped but underestimated." The Internet will change everything.

#### **How can I influence decision makers to use Web-based training versus traditional training options?**

The costs for a Web-based training program are often lower than those associated with instructor-led training. The biggest hurdle is often the initial costs for the investment in learning the technology and the development time. Companies are finding that the costs associated with the delivery of the training are much lower than for traditional methods.



### **How can I motivate employees to use Web-based training?**

Any motivation strategies you use now for other training can be applied to Web-based training. In addition, the tracking and reporting available with Web-based training allows you to structure requirements and rewards for completion and mastery. Develop some enthusiastic in-house marketing that will convince students that the perks of Web-based training are just as rewarding as the free coffee and donuts offered at their favourite seminars.

### **How can management be assured employees are actually completing the program?**

Because Web-based training programs are designed to be "at your own pace," the importance of tracking a student's progress is a concern. The program can be created with specific controls that keep track of where employees are in the course, and how well they are doing. The major authoring tools allow you to automatically keep track of employees' scores progress, time spent on a lesson, and so on.

### **How can I help my training staff, who are used to instructor-led training make the transition and embrace Web-based training?**

To make the transition easier for trainers as well as students, some organizations include elements of both Web based training and ILT for some programs, especially early on. There are a variety of new roles and career opportunities for those who are willing to adapt to the new technologies.

### **What kind of team is necessary to develop Web-based training?**

Teams range from just one, very dedicated person who does it all, to project teams or over 40 professionals.

In general, at a minimum you will need:

A project manager capable of dealing with diverse work styles and personalities.

- An instructional designer familiar with computer-delivered instruction
- A programmer or author to use the authoring tool
- A graphic artist
- A subject matter expert
- A Webmaster for maintaining the program on the server
- Someone who can obtain funding for Web-based training from management
- The people you use, naturally, will have either one or a combination of the above skills.

### **How much multimedia is being used now for Web-based training?**

Multimedia on the Web is growing in popularity with languages like Java and plug-ins for authoring tools like Shockwave and Neuron making it possible. Bandwidth is the major limitation and, right now, the vision and the potential are greater than the reality.

### **How about multimedia in the future for Web-based training?**

Emerging technologies will provide greater bandwidth (ie. bigger pipes), and greater compression (ie. lower fat) for delivering audio and video. It is only a matter of time before multimedia over a company's network and the Internet is



commonplace. In the meantime, hybrid CDs, also known as Internet CDs, are an alternative in which the program with audio and video are delivered on a CD-ROM, with updates delivered automatically over the Web. This must be what it was like in Detroit in the early 1900s when car makers were trying to figure out basic technologies, such as getting a manual transmission to work. Everyone knew the problems would get solved and just about everyone was working on it.

#### **How do I determine the appropriate level of interactivity and media?**

The type and amount of interactivity required varies with the instructional objectives of a program. It is generally not possible for a program to be “too interactive.” However, it is possible for a program to suffer from too many multimedia bells and whistles, when they are gratuitous and don’t contribute to meeting the instructional objectives.

#### **From an instructional designer’s perspective, how is Internet-based training different from multimedia training?**

Designing for the Internet presents a special problem. Connection speeds can be slow and downloads can be long due to factors over which trainers often have no control. Until bandwidth improves, design out most of the “fat media” in the program, especially video. Design in interactivity, discussion, and access to other resources that are part of the benefit of training online.

#### **From a student perspective, how is Web-based training different from CD-ROM based training?**

CD-ROM based training programs usually have their own unique interface. Web-based training requires a Web browser, so the basic navigation scheme is usually familiar to the student. Students who will be receiving the Web-based training should be familiar with how to use a browser. (However, some Web-based training programs are designed to replace the browser window while the course is running.) In general, the student should see little difference in the actual training once it has been accessed. If the training is over an intranet, the difference is not very noticeable, but over the Internet, the connection speeds and download times are often much slower than CD-ROMs.

#### **I have noticed that some online training programs, especially when offered through a public Web site like Microsoft’s on-Line Learning Institute (MOLI), have a learning assistant or facilitator as part of the learning process. Is this necessary?**

An assistant or facilitator available online can be helpful but your training can be designed without them. An online assistant can help handle customer service issues or technical problems. A facilitator can help with content issues and can guide discussions. Web-based training, especially when designed within an organization is usually designed to be a standalone process to be engaged in at any time of the day or night. Even in the latter case, having e-mail access to a Webmaster, course manager, or content expert can be helpful.

#### **Can existing CBT be converted into Web-based training?**

The major authoring tools (described in Chapter 8) allow you to create both a standalone version of the program and a Web version of the program. Depending on which authoring tool you used to create a pre-existing CBT program, you may be able to convert most of it for delivery over the Web.



### **Can I use Web technology on a company's internal network?**

Yes. In many companies, the same technology used for the Internet exists on the internal local area network, which is then referred to as an intranet. While the public Internet is getting all the publicity in the press, the fastest-growing segment of the market for Web browsers and servers are companies' internal Intranets.

### **What hardware is required by the end user?**

A computer fast enough to handle the training program. For Windows computers, a 486 is okay, but Pentium or better is preferred. For Macintosh computers, a 68040-based machine is okay, but a PowerPC is preferred.

A sound card capable of playing back any audio files the training program uses.

A network connection, whether it is a digital line connected directly to the company server, or a modem that can dial into the Internet. If your training were delivered via the company intranet, for example, your users would not need a separate Internet connection.

### **What software is required by the end user?**

A web browser.

Any specialised browser plug-ins or controls that are required by the particular training program, such as audio or video.

### **Does the end user need the same computer system as the developer?**

No. One of the major advantages of Web-based training over other types of computer-based training is cross-platform compatibility. Web browsers can access Web-based training using a language that is platform-independent.

### **What special programming languages do I have to know to create programs for the Web?**

Although you need to be somewhat savvy in all things Web-ish, there are no complicated programming languages you need to learn. In general, you should be familiar with HTML, although this is not required if you are using one of the high-level HTML editors, such as Microsoft's FrontPage which allows you to create Web pages without HTML. The major authoring programs are nearly the same whether you are developing for CD-ROM or the Web. There are also "object oriented" visual tools for programming with Java, such as Aimtech's Jamba.

### **I have heard about Java, Shockwave and other technologies for delivering multimedia over the Web. How much do I need to know technically to take advantage of these?**

Java is a programming language that allows the developer to create small applications called applets that control specific aspects of a Web-based training program, such as creating interactive animations. Shockwave is a plug-in for programs developed with Macromedia's Authorware so these programs can be viewed with a Web browser over the Web. There is also the Neuron plug-in, which allows Toolbook II applications to be viewed with a Web browser. You should be aware of what Java is capable of, although the specifics of programming a Java applet are not necessary if you use the right authoring tool. Or send one of your staff off to authoring school.



### **What kinds of authoring systems are available for Web-based training?**

Authorware, ToolBook II, IconAuthor, Quest, IBTAutor, CBIQuick, and many others are currently available, most with training components built in. If you want to start with a simple program, an HTML editor or Web page layout program like Netscape Navigator Gold, Microsoft FrontPage, Claris Home Page or Asymetrix Web Publisher may be all you need.

### **What is Adobe Acrobat? Do I need to use it?**

Acrobat is used when existing documents need to be displayed on screen or downloaded in the same format as they appear on paper. Acrobat saves the graphics and font files along with the text of the document so that it always looks exactly the same on the screen no matter where or how it is viewed. Government agencies use Acrobat for electronic versions of reports and papers because they need to make references to specific page numbers. You can use Acrobat to reproduce existing company documents if they need to look the same on the screen as they do on the page. Be aware that HTML has similar functionality.

### **Should the training be interactive on the Web or should it be downloaded and used offline?**

It depends on the type of training and administration that you are after. Real-time administration, as the user is taking the course, can be achieved while the user is online. Offline programs can be set up to send completion information and test scores at the end of the course, and, if necessary, download another portion of the course. But if a student is taking a course offline, he or she may not be aware of any updates to the program that may occur while the course is in progress. If the online course requires a change or update of some part of the data or coding, the student is not disrupted and does not have to initiate another download of the entire course.

### **Where is the water cooler?**

Down the corridor on the right. Just past the cubicle with all the Dilbert cartoons.

### **How fast a connection is needed to access Web-based training effectively?**

If your program utilises video, animation and audio, the connection should be as fast as possible. For home office users, this means ISDN or 56Kbps modems. If the training utilises limited graphics and no audio or video, then a minimal connection via a 14.4 modem should be adequate.

### **What is bandwidth?**

The actual speed available at the time of the transmission. The more users on a network, the less bandwidth available for that transmission.

### **How can I calculate how fast my program will be delivered over a network?**

It is difficult to calculate actual speeds because bandwidth varies so often. One moment, your training might be delivered at 6.5Kbps; the next it may be 1 or 2Kbps or even less. In general, your files are calculated in bytes (MB, KB, etc) and bandwidth is measured in bits (MB, KB, etc). To determine how many bits your program is, multiply the number of bytes by 8. A program that takes up 4



megabytes of space takes up 32 megabits. If your connection speed is 2Mbps (megabits per second) it would take 16 seconds to download. Alternatively, over an Internet connection of 33.6Mbps (.336Mbps) your 32Mb training would take about 96 seconds. All this is assuming ideal conditions. And of course, conditions are always less than ideal.

#### **Do I need a Web server to provide Internet-based training?**

A web server is needed to have the training available to others. The options are a server maintained by your department or information technology (IT) department, or a public Internet service provider (ISP).

#### **Once a course is developed, how do I get it on the Internet or intranet?**

Most of the time it is just a matter of placing your program and its accompanying files on your server, then testing to ensure it works properly. Ask your network administrator, Webmaster or ISP provider how to upload the files to the Web site.

#### **How can I charge for courses over the Internet?**

The most utilized method is to have users pay up front by credit card, then give them a password that lets them into the program once payment has been made. Security for taking payment over the Internet is relatively good. For internal programs over an intranet, course registration software can automate chargebacks to the paying department.

#### **I've heard about viruses, hackers and so on. What about security?**

Your company's intranet should be protected from hacker intrusions from the public Internet by a firewall. Your IT department or network administrator can recommend virus protection software. While these problems exist and make big news in the media, the percentage of incidents is quite small and should not deter your deploying Web-based training.

#### **What is a firewall?**

A firewall is a hardware and/or software security measure implemented by companies with internal intranets to keep out unwanted transmissions or visitors from the Internet. An effective firewall will keep out hackers, casual users and accidental queries, while allowing access to legitimate users of the company's intranet from a remote location. Some firewalls limit the ability of employees within the company to download files from the Internet.

#### **Where can I view existing Web-based training programs?**

Melody Davidson, training manager for McDonald's Corp. in Seattle agrees. "It's far more effective to do experiential learning," she says. Davidson uses gameshows in nine training seminars to reinforce 'nuts and bolts' information like the temperature of the fry vats and garbage collection schedules. "Tests may prove this kind of information transfer, but gameshows are more fun. It's a 'do and learn' opportunity that lets students reach conclusions on their own."



Davidson sets up the Jeopardy-style game in a multi-tiered format so that winners compete against each other, and the best ones go to the national convention, where they have playoffs for "Top of the Arch" employee awards. Thanks to their experience with Gameshow Pro 2, her Seattle division won the national competition. "They use the game to see what they know and to practice," she says.

#### **Stress relief reinforces learning.**

When training is intensive, games are an immediate way to lower the stress level of students — quite the opposite of looming exams. "Laughter can lower stress and boost alertness," says Dr. Norman Cousins in the book *Anatomy of an Illness*.

Carla Kaufman, applications knowledge specialist for Lawson Software in St. Paul takes advantage of that. She uses gameshows in the classroom to liven up students during a heavy two week applications training course. "By the middle of the second week, everyone is tired and a little overwhelmed," she says. "They are stressing about exams and presentations that they have to do. "When we start the game, everyone instantly relaxes and has fun. It's like going to happy hour."

She uses Gameshow Pro 2 to review application knowledge in many of these workshops. "Playing the game shows the students what they did and didn't learn," she says. "It's a much better way to reinforce the lessons of the past few days than to have me stand up and summarize the material."

"A gameshow is a stress-free and fun way to learn that doesn't diminish the importance of the subject matter," adds Elfassy. "If they are always under stress, the information never reaches their thinking brains." By using gameshows instead of traditional quizzes, the stress is removed and learning is maximized, he says.

#### **Teamwork is reinforced.**

In most cases, trainers group students in large teams with buzzers, and questions and answers are projected on a large screen. It's very physical, which boosts learning, according to Dr. Max Vercruyssen of the University of Southern California, who studies how the body's posture affects knowledge-gathering. His research shows that, on average, standing increases the heart rate by ten beats per minute. That sends more blood to the brain, which activates the central nervous system to increase neural firing. "Psychologically," he says, "standing up also creates more attention arousal, and the brain learns more."

Dr. Jon Ebbert, chief medical resident of the Rochester, MN-based Mayo Clinic, witnessed the result of that increased brain activity when his residents compete in bi-monthly challenges, like "Name That Congenital Abnormality," a Jeopardy-style game that reinforces medical knowledge. "It's is a different way to learn," says Ebbert. "It's an informal learning environment. The residents let their guards down, which makes them more receptive to new ideas, and they are more willing to challenge themselves."