SHOULD ORGANIZATIONS BE JUMPING ON THE WEB-BASED TRAINING BANDWAGON?

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INSIDE
Lecture; Self-paced Text; Audiotape; Online Help; Videotape; Computer-Based Training; Conferencing Technologies; Web-based Training

INTRODUCTION
The latest training bandwagon is Web-based training. Three years ago it was multimedia training, and six years ago it was interactive videodisc instruction (referred to at the time as IVD or IVI). All of these older technologies were touted as the solution to all training problems — yet none of them were. So, will Web-based training be any different? Perhaps. The Web’s anywhere/anytime capabilities offer great training advantages to large, widely dispersed organizations. To put this new medium into perspective, this article reviews the major training media available today, discusses some of the pluses and minuses of each, and explores the current applications of Web-based training.

UNDERSTANDING THE MEDIA
While it is true that any medium can be used to teach anything, it is also true that some media are better than others for certain types of training. The medium should be selected based on how well it can meet the training objectives. The same holds true for this latest training bandwagon.

To understand the potential of Web-based training (WBT), it helps

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Web-based training is the emerging umbrella term for any training delivered on an Intranet or the Internet. The Web’s anywhere/anytime capabilities offer great advantages to large, widely dispersed organizations. While it is not a training panacea, Web-based training is appropriate when training will be used by multiple people in multiple locations, when the content can be modularized, and when it can be delivered with existing hardware and software delivery methods. If the training also includes complicated graphic displays, as well as full-motion video and audio, then Web-based training is probably the way to go.
to understand the various media available and their corresponding strengths and weaknesses. For simplicity, this article will look at nine media: lecture, self-paced text, audio tape, online help, videotape, teleconferencing, videoconferencing, traditional computer-based training (CBT), and Web-based training. While this is not an all-inclusive list of the available media, it does include those most commonly used.

1. Lecture
Lecture refers to the traditional classroom experience, where the trainer is in front of the room and the trainees are in their seats. Trainers can use a variety of media to supplement their delivery, but the primary delivery and pacing is by the trainer. The advantages of lecture are widely touted: the training can be highly interactive and customized to each class, and the trainer can answer random questions and give personal attention to each trainee. The disadvantages are less well-known, but equally important.

The benefits of interactivity and customization can turn to disadvantages if courses are not taught consistently enough for all trainees to learn the same information. They are also delivered at the trainer’s pace, rather than the class’s or any given individual’s pace. The largest disadvantage is that the trainer and trainees must be in the same place. This generally means travel expenses for trainees and trainer, lost time expenses, as well as expenses for meals and refreshments. These expenses quickly add up.

2. Self-paced Text
Self-paced text (or programmed instruction as it was once called) first gained appeal in the academic world in the late 1950s. By this media, trainees read a short section of explanatory material, answer some questions, check their answers, and then continue on. The answers can appear in the margins opposite each question, or they may be below the questions. At the end of a lesson, there is usually a quiz. Trainees are supposed to pass the quiz, generally at 80 percent or higher, before going on to the next module. Traditional computer-based training and today’s Web-based training are based on this format for instructional design.

The most obvious advantage to self-paced text is that it is just that — self-paced. It can also be used to show still visuals and is very portable. On the down side, feedback is limited, and there is no way to really verify learner understanding.

3. Audiotape
Audiotape training presents topics in a linear fashion — one topic after the next. It can also contain questions to check on progress. The trainee pauses the tape, answers the questions, then turns the tape back on to hear the answers. Some newer tapes have been prepared with additional
information on given topics on the “flip side” of a tape. When trainees are done with a module, and would like a topic explained in more depth, they turn over the tape, listen to the additional material, rewind, and continue studying with the first side.

The benefits of audio-based training are that the tapes can be replayed whenever necessary and they are portable. Two major drawbacks are that there is no visual component and the lessons must be accessed sequentially.

4. Online Help
Online help provides computer users with reference material stored directly on the computer. It can range from reference books re-keyed online and still read sequentially, to context-sensitive help for specific computer fields/screens. It can also take the form of hypertext, whereby it is randomly accessed based on a typed word, pressed key, or other jumping signal. An advantage to online help is that it can be accessed “just-in-time” when the help is needed. Disadvantages include very little feedback to users and often limited searching functions.

5. Videotape
Videotape training also presents topics in a linear fashion — one topic after the next. It can also contain questions to check on progress. The trainee pauses the tape, answers the questions, and then turns the tape back on to see or hear the answers. Videotape training can show one or more instructors talking to the camera, commonly called “talking heads;” or it can show complicated processes step by step; or it can show some other kind of action. Used in conjunction with other media, well-designed videotape courses are powerful learning tools. (The term “multimedia” was originally coined to refer to these training courses that used audiotapes, videotapes, and self-paced texts with tests.)

Since videotape is full-motion, the student can replay the tape if necessary. As with audiotape, the disadvantages are that it is accessed sequentially and student feedback is limited.

6. Traditional Computer-based Training
Computer-based training (CBT) can be delivered on mainframe, midrange, and personal computers (PCs), with or without splashy graphic images. Traditional CBT does not have video or sound capabilities, and is a lot like self-paced text. Trainees read a short section of explanatory material, answer some questions, and then continue on. A difference over self-paced text is that trainees can receive feedback for both correct and incorrect answers. So, instead of just knowing their answer was
wrong, they know why. It can also be set up to automatically skip mate-
rial that trainees show they already know.

As in self-paced text, there is usually a quiz at the end of a CBT lesson. 
Trainees must pass the quiz — generally at 80 percent or higher — be-
fore going on to the next module, but CBT can automatically show train-
ees review material about the questions that were missed. Unlike a text,
where trainees can just skip a test and go on if they get frustrated, CBT 
courses can force them to keep at a section until they get it right. Also,
trainee answers can be tracked to help identify bad questions or insuffi-
cient explanatory material.

Additional advantages of CBT are that it can simulate computer soft-
ware, and can give feedback based on responses. Drawbacks to tradi-
tional CBT are that it has a limited visual component (especially on 
mainframes) and that it requires special authoring systems to write — 
and often to deliver — the training.

7. Teleconferencing

Teleconferencing is similar to the traditional lecture medium, except that 
the trainees are usually at geographically dispersed locations. Each stu-
dent is tied into the central site through a call to the instructor, or by via 
a call to each individual by the instructor or a phone conferencing group. 
The advantages to teleconferencing are that information can be distribut-
ed simultaneously to multiple people in multiple sites and at relatively in-
expensive cost. Not only can the trainees be in separate locations, but 
they can be at different locations for every call. Drawbacks include the 
lack of visual communication and the fact that the instructor usually con-
trols pacing, as well as the schedule of classes.

8. Videoconferencing

Videoconferencing is similar to the traditional lecture medium, with some 
exceptions. As with teleconferencing, the trainees are usually at geo-
graphically dispersed locations. The sites are hooked to the central site by 
satellite links. These links can be one-way (trainer to trainee) or two-way 
(trainer to trainee and trainee to trainer). Among the benefits of videocon-
ferencing are that the instructor can answer random questions, give per-
sonal attention to each student, access geographically dispersed trainees,
and use visual displays. As for drawbacks, the training requires often ex-
pensive satellite transmitters/receivers, the training is still delivered at the 
trainer's pace, and, even today, the technology is not always reliable.

9. Web-Based Training

Web-based training is the emerging umbrella term for any training deliv-
ered on an intranet or the Internet. It can be very much like traditional
CBT or it can be multimedia. As noted earlier, the term “multimedia” originally meant a training course that used audiotapes, videotapes, and self-paced texts. Today, the term “multimedia” describes a training program where video, music, voice, and text are delivered on a computer. The computer does not show clips of video from a tape or disc, as IVI did; rather, it shows digitized images stored on a hard disk or CD-ROM.

Web-based training is becoming very popular because it delivers consistent training, allow students to train at their own pace, and can include sound, video, and still graphics, as well as standard text. More sophisticated programs can also track trainee responses and automatically branch to extra topics, just as traditional CBT can. Some Web-based training even includes live videoconferencing capabilities, depending on the set-up. In addition, unlike previous technology-driven media, as long as user hardware and software can access the Web, the hardware and software need not be consistent. Thus, PCs with Windows 3.1, Windows 95, and Windows 98 can all access the same course, as can Macintoshes. With such a wide range of hardware and software setups in use today, this gives Web-based training a decided advantage.

However, while this technology is wonderful, there are still major drawbacks. First of all, to receive the training correctly, each trainee must have some type of intranet/Internet connection. If the course is multimedia, this must be a fast and graphically enabled connection. And, while many people already have these connections at work, and some are also getting these connections at home, they are far from universal. Even when students have the correct hardware, software may be a problem if the courses are delivered using a proprietary system.

Finally, prospective students just will not take poorly designed Web-based training, which is slow in loading, lacks visual interest, etc. While this presents a problem with all training courses, it is more profound in Web-based training because students have so many other Web options competing for their time.

POPULAR WEB-BASED TRAINING TOPICS

As with the earlier computer-delivered training methods, many of the Web-based training courses available today concentrate on computer skills. Thus, a variety of vendors offer Web-based training courses in word processing, spreadsheets, and database and graphics software; some also offer courses in the less widespread computer application categories such as project management and CAD. There are also courses for technical certification.

But not all courses are computer oriented. For example, DPEC, a major CBT vendor in the 1980s and a major Web-based training vendor today, also offers soft skill courses. These include business writing skills, as well as time management and negotiation skills. ESI, known primarily for
its quality instructor-led course offerings, also offers a variety of Web-based training courses.

Unlike the CBT and videotape days, however, it is not just the large training vendors that offer Web-based training courses. Rather, colleges large and small are jumping on the Web-based training bandwagon, and offering many of their traditional courses through this new medium.

Perhaps the largest adopters of Web-based training, however, are corporations. Employee orientation programs, sales training programs, and many other internal training courses are being offered online to save organizations hundreds of thousands of dollars on travel expenses when workers are highly dispersed.

**Developing Web-based Training**

So how can an organization decide if Web-based training is the way to go with a course it is developing? First, it must determine if the course meets these criteria:

- It can be used by multiple people in multiple locations.
- Its content can be modularized.
- It can be delivered with existing hardware and software delivery methods.

If the course meets these criteria, then it is a good candidate for traditional CBT and Web-based training. If the course also requires complicated graphic displays, full-motion video, and audio, then Web-based training would probably be the way to go.

**CONCLUSION**

Just like its predecessors, Web-based training is not a training panacea. It is, however, a viable medium for many training courses, and should be added to the list of possible media when an organization is considering the development of a new training course.

**Web Site References**

To get additional information on Web-based training, and to look at some sample classes, readers should check out the following Web sites.

   In addition to presenting an overview of Web-based training, this site has a sample Web-based training course that teaches the fundamentals of HTML.
   This is the home page for the vendor of the Web-based training product TopClass.
   This is the home page for the vendor of the Web-based training product SocratEase.
   This is the home page for the vendor of the Web-based training product Enterprise Education Server. It has an online demo area where the user can practice creating a Web-based training course.
   This is the home page for DPEC, a major provider of CBT and Web-based training courses.
   This is the home page for ESI, a major provider of instructor-led, CBT, and Web-based training courses.
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