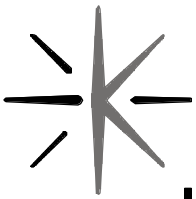
Using the Internet for education and training:

How to decide if online training belongs in your organization.

Table of Contents



elementk

What is Online Education and Training?

Online Education and Training (OE&T) is a structured, interactive approach to educating and informing the workplace. It has its roots in the century-old correspondence course, but today is commonly found in a multimedia, web-based environment. According to International Data Corporation, the higher education distance learning market is growing at a compound annual growth rate (CAGR) of 33.1 percent. Most of these learners are adults who wish to improve their business computer skills and career opportunities. Corporations, too, are aware that providing and encouraging ongoing education and training for employees is as essential as health benefits. What's more, it's a win-win situation for both the employee and the employer.

According to the "1999 CBT (Computer-Based Training) Report," published by *Inside Technology Training* magazine, two-thirds of corporate training is still delivered via traditional methods. Based on a survey of over 500 respondents involved in corporate training, the report concludes that online training and education is growing. "This is consistent with the supposition that larger companies are committing proportionately more (as well as absolutely more) resources to web-based training," the report states.

In the past, most education and training required either the services of in-house training specialists or sending employees out-of-house to seminars and classes. Today, technology delivers education and training directly to the workplace and the learners, rather than the other way around. Online distance education courses serve as an adjunct or enhancement to in-house corporate training, providing educational and training services at any time, in any location, and often when the resources would not otherwise be available. A few examples of those offering OE&T resources:

- Two-year and four-year colleges and universities, from the Colorado Community Colleges to Rochester Institute of Technology.
- Business-education collaborations, such as the Caliber Learning Systems and the Wharton School at the University of Pennsylvania.
- High-technology companies, such as Lotus Learning Space and Real Education.
- Web-based educational institutions, such as Element K and Western Governor's University.

Today, online education and training incorporates a variety of instructional media to deliver content: journals, books, CD-ROM, software, video, audio, and networking — either from the web or from corporate intranets. The ubiquitous web can be not only the delivery system — in some cases it's the classroom itself. Corporate intranets are fast becoming an expedient platform for delivering OE&T. According to The Masie Center, a technology and learning think tank, over three-quarters of major U.S. corporations plan to use corporate intranets for corporate training or learning, and most Fortune 100 companies are already implementing web-based training programs. Many corporate trainers and intranet coordinators believe online education and training may be the first true enterprisewide intranet application.

OE&T is computer-based collaboration in one of its finest implementations. Four types of technology have been primarily responsible for the growth of online learning in the 1990s:

Personal computers. Next-generation PCs running the Intel Pentium III microprocessor, coupled with sophisticated new audio and video hardware and software, promise to enhance Internet access and broaden the multimedia potential of the web.

Multimedia, in the form of streaming audio and video, 3D graphic screen images, and interactive voice recognition, dramatically enhance OE&T.

The Web. The web itself is changing, moving to cable and satellite venues, and developing broadband capabilities to handle the emerging digital media convergence. It is at once a platform for delivering OE&T delivery as well as an application tool for enrolling in and attending online courses. In addition, e-commerce is making it possible to sign up instantly for courses.

Networking. We live in a networked world where we can work or learn anytime, any place, so long as we have a computer and a connection. The Internet is at the center of the networked world, and corporate intranets are driving OE&T growth. Two of the most common network applications for OE&T are email and chat rooms.

What OE&T isn't.

Online education and training is no panacea for classroom or instructor-led training. Neither is it necessarily less expensive, nor a blanket replacement. The traditional instructor-led classroom is not closing its doors; quite the opposite, in fact, due in part to the enhancements brought to education and training by computer technology. OE&T is another approach — as well as a very powerful tool — in the corporate trainer's education and training repertoire.

As such, it is subject to the same rules of development and implementation as traditional education and training; in other words, it's not going to teach itself without instructional design. OE&T cannot be allowed to develop in a vacuum, or without traditional pedagogical practices; if it does, it risks becoming another piece of technological detritus along the information highway.

OE&T has created the need for more training administrators, trainers, instructional designers, and technol-

ogy implementers. What's more, they need more skills and abilities and — yes, education and training themselves. Indeed, the stated mission of The Center for Graduate Studies at Marlboro College is "to train individuals to lead the Internet and online strategies of corporate, non-profit and educational institutions." The Center offers three Master of Science degrees in Internet Strategy Management, Internet Engineering, and Teaching with Internet Technologies. For those who aren't necessarily in need of an advanced degree, online learning centers such as Element K offer specific technical courses and training implementation courses, such as building an online educational community, creating newsletters, developing an intranet, and strategies for using the Internet.

Who's offering OE&T.

Corporations, government agencies, nonprofit organizations, colleges and universities — in other words, just about everybody. Some aspects of online education aren't new; computer-based training (CBT) has been around for a while. What is new is online delivery: New web-based OE&T organizations, ranging from Western Governor's University to Element K, offer hundreds of online courses.

Western Governor's University **(www.wgu.edu)** acts as a clearinghouse for traditional collegiate courses offered by many colleges and universities. Most WGU courses run on a conventional term schedule and charge a conventional tuition.

Over 150 computer-related courses, in subjects from programming to personal and business applications, are offered at www.elementk.com. Element K courses start when the learner enrolls. Learners can take as many classes as they like for less than $10 per month.

What OE&T can do.

OE&T can save time, money, and instructional resources. What's more, it can help you gain new perspectives on the curriculum, content, and delivery of education and training.

Saving time. OE&T delivers on the promise of any time, any place learning. Education takes place at the learner's convenience. In some cases, this may mean learning at home. Conversely, the enterprise can provide education and training on an as-needed basis — for example to bring a team up to speed in order to launch a new product.

Spending less. OE&T can be more cost-effective, especially when self-directed instruction is the learning mode. When the web is used for delivery, it is the sole source of the media content delivery. If training is dispersed, CD-ROMs are an inexpensive medium. Anytime, anywhere delivery saves costs, and employees don't necessarily miss work.

Conserving resources. OE&T utilizes the existing infrastructure of networks, intranets, and PCs, while conserving and helping better utilize other corporate or organizational resources. "The trend in both traditional and distance learning is toward the online learning center," says Rob Zwettler, senior vice president, editorial, of Irwin/McGraw-Hill. "We don't see the book going away, but the CD-ROM and the Web are becoming integral aspects of learning." A new trainee can begin study on his or her own and, once prepared, can move into the active learning phase with an instructor or mentor.

New perspectives on curriculum, content, and delivery. OE&T lends itself to an innovative, modular approach to learning that helps you develop new visions for your training curriculum, course contents, and the means of delivering training to your community. Online course delivery is very similar to just-in-time (JIT) manufacturing: learners learn only what they need for current requirements, but then may enroll in additional modules as required. OE&T content can be updated, revised, and re-broadcast in far less time than conventional learning media, such as books. Multimedia content improves learning; humans are visual learners, and studies have proven that the process approach to online learning, combined with multimedia learning tools, can improve retention by as much as 50 percent.

What OE&T can't do.

OE&T should not be thought of as a replacement for student-teacher interaction, because it emphatically is not. However, in many cases it enhances the relationship, for example through Internet chat and online discussion forums. Online education and training can't replace hands-on learning, but it can be used to great advantage in helping visualize and bring studies to life through 3D imaging, streaming video, sound, and interactivity.

OE&T should never be thought of as a one-size-fits-all solution. In fact, it is creating a new paradigm in education, based on two foundations:

- Just-in-time (JIT) education, targeted delivery across time and space.
- Modular learning, delivering only as much information as needed, when needed.

This paradigm is radically changing the way organizations use educational resources. In the past, learners had to wait for the new course to begin, then had to sit through the entire term whether they wanted to or not. Online education and training is a strategic resource that allows organizations to use it like other resources. Now, it can be an asset in launching new services or products, building quick-response teams, and developing new initiatives.

Where it fits, and how to integrate it with your current training plan.

OE&T can be integrated into existing corporate training in as many ways as corporate training resources permit. A few examples:

- As an adjunct to ongoing training.
- In specific modules that fulfill a particular need, for example a new software release, revised office procedures, or a new reporting requirement.
- As an enhancement to existing classroom training.
- As self-paced learning either on the web, intranet, or self-study media (such as CD-ROM).

Corporate trainers or education directors planning to offer online education and training in their organization should think strategically about how the OE&T component fits into the organizational E&T plan. In their report entitled "New Connections: A Guide to Distance Education," authors Rich Gross, Diane Gross, and Ray Pirkl define a successful online education program as having the following characteristics:

- Commitment and support from key administrators, including a mentor.
- A strong rationale for using distance learning to extend the educational scope.
- A clear understanding of the learner.
- A mission and goal statement.
- A program administrator.
- Adequate faculty and staff training and support.
- A budget for the technology and for the implementation.

The authors also recommend that the issues of intellectual property, copyright, and fair use be clearly defined and acknowledged before a training program is implemented.

How to customize OE&T for your organization.

Here's a great thing about OE&T: you can target specific areas of your overall strategic plan, selecting and tailoring each and every course offering to your programs and approach. As mentioned earlier, the keys are using the just-in-time (JIT) approach and implementing individual, modular educational components.

You may have a well-developed classroom program — for example, the new hire orientation course — that works fine in most respects. However, say you want to add a multimedia presentation of your manufacturing floor process. You can implement only what is required to accomplish this, then update just that individual module whenever it becomes necessary.

Be on the lookout for ways to integrate classroom and on-line learning. Try to extend the reach of a class with intranet follow-up. Be sure to map the same curriculum for both styles of learning. The "CMT Report" asserts that post-training learner assessment is most important, so ask learners for feedback, especially repeat learners or those who excel in their education and training. The best feedback is verbal or via email; if you use a survey or questionnaire, be sure the questions are specific enough to return valuable information.

Benefits from OE&T accrue to the individual learner as well. With resources such as elementk.com, employees can take as many courses as they like for one flat monthly or annual fee. This adds great value to your training program, because people can learn on their own time, beyond the required material or the in-house classroom. And every time people enroll in more courses, it makes your training program shine.

Since online education and training is on-demand, you can use it to pinpoint special needs and fill in gaps in your ongoing programs. For example, say the IT organization has hired a SQL programmer-analyst as a temporary employee to fill in for a teammate who is on maternity leave. The temp knows Oracle SQL, but your company uses Microsoft Server SQL. Simply sign the temp up for the online course and he or she can quickly get up to speed.

Learners at Element K have the opportunity to take courses from world-class experts, professional educators, and authors. In many cases, the teacher is the author of the required text or book. What if learners have a question? Not only can they ask the teacher, but they can avail themselves of many additional resources, including chat rooms, online information exchanges with fellow students, access to the Element K Resource Library, and the vast resources of the web. Element K students can order the professional journals, books, CD-ROMs, and software they need to continue learning. They will also find opportunities to join professional memberships and obtain subscriptions to publications at substantial discounts. Most courses earn Continuing Education Units (CEUs) as well.

When designing online education and training, Elliott Masie, head of The Masie Center **(www.masie.com)** offers the following advice:

Break your design into the smallest objects possible. Aim for four-to 10-minute units of development. As learning moves online, there will be more need to offer multiple levels of content delivery, based on bandwidth.

Plan for the future. Even if you are not moving your content to an intranet this year, build a design model that will let you port it to the platform in the future.

Don't design, write, or store content in HTML. It is too inflexible as a long-term storage media. Most corporate web pages in the future will be assembled on the fly from database content storage, rather than "hard coded" in HTML.

Audio will play a key role in most online learning programs of the future. This will require some strategic planning for authors and designers. For example, if you build a learning program with full audio, it may run perfectly on the office network. However, the same program will have only a snippet of compressed audio when accessed by a traveling staff member.

Move beyond the course as a unit of learning. In the future, units of learning will be much shorter, much more modular, and able to stand-alone.

Remember that instructional design is still the most valuable skill. We still need great instructional designers who understand objectives and motivation to develop online learning.

The vision thing. Develop a vision for on-line learning training. Create a pilot program using internal or external courseware. Evaluate your learners to assess how they react to this form of delivery. Likewise, provide focus and status for the instructor side of your endeavors — make sure trainers don't feel like legacy code because you're building OE&T teams and launching participatory projects without them. Build a strong sense of personal ownership into each course, and make sure instructors know that they add value to the organization's missions and goals. OE&T combines the best aspects of instructor-guided education with self-paced learning. Therefore, be sure to enlist the power learners to help promulgate your initiatives and help ensure their success. There are numerous venues and opportunities for interaction between instructors and power learners. Examples:

- Your organization plans to upgrade to a new version of Microsoft Outlook, and 2,000 people will be affected. You can enroll people ten or 20 at a time, and synchronize the upgrade so that when a department is fully trained they can migrate to the new version. Use power learners as adjuncts or aides from class to class or department to department.
- Your IT department needs to keep abreast of Java programming on a continuing basis. You enroll your key programmers in groups where they learn, study, and share information and knowledge with each other in online chat groups. Afterwards, the power learners bring what they've learned back to the IT department and disseminate it, either informally as mentors or formally as on-the-job trainers.
- You need to train one person in a new methodology or technique, or you need to train your in-house trainer so that they, in turn, can train your people. Select the best students from the subject areas in each class and turn them into power learners, or even trainers.

How to integrate OE&T's best parts.

The beauty of OE&T is that it's infinitely customizable. Learners can study at work or at home, during office hours or at their convenience. What's more, they can take more than one course at the same time or switch from one to another within the same time frame, often at no additional cost. Some courses have an established beginning and end date, while others are self-paced. But the flexibility means that in many cases, they can be administered on an as-needed basis to individual learners.

In some online learning environments, the media is tailored to the course content (or it may be available in more than one media format) so instructors can pick whatever they need — even deciding what lessons to exclude or adding material specific to the educational objective. In addition, the books and other study materials often can be purchased online. Since the training organization selects, directs and controls all the instructional media and the distribution channel, they can also custom-tailor it.

How to evaluate and test OE&T.

OE&T can be evaluated and tested in exactly the same way as any other internal or external education or training. One advantage that has proven itself in OE&T is no grades. The proof of this is in the pudding, so to speak: people excel at their studies and complete courses because they desire the knowledge, or because they know what will be expected of them once they have completed the course. A few of the basic questions to ask are:

- Are employees learning successfully with online technology? Is it the most efficient and productive method?
- Which types of employees seem to get the highest level of learning return on investment?
- Why?
- How does online and intranet-based learning deliver additional benefit to the enterprise in its mission and goals?
- How many training dollars are being spent per employee? How do these figures compare against the industry norm? What was being spent in traditional, non-online, training?
- What is the comparative rate of return?
- Can you evaluate, either in soft or hard dollars, the enhanced value or increased productivity rate of return?

How to look at the numbers. When to bank the savings.

The simplistic view of the OE&T payback is the cost — ostensibly per learner — of an OE&T program vs. the cost of traditional training. However, most OE&T is going to be integrated with, and used to support and sustain, ongoing corporate training. We can no more get a precise figure for the ROI of education and training than we can measure how its benefits accrue to the company's stock valuation, even though we know it has a profound impact on both.

However, over a third of those responding to the "CBT Report" survey said they couldn't break out a separate budget for online training. "The budget for web-based training varies with company size," the report states, "and it shrinks as a percentage of the training budget as the company gets larger. But it does not shrink as a percentage of CBT budget."

The report also states that the average training budget was about $4.49 per employee. Further, most respondents were unable to say if computer-based training was reducing training costs. In many ways, the training budget seems akin to the R and D budget, where it's easy to see what goes in but more difficult to place a value on what goes out. If training people want more money and resources to move forward with online training, it's time to crank up the spreadsheet and prove out the numbers.

Hezel Associates, an educational consulting firm **(www.hezel.com),** has created a business model, "Developing Distance Learning in Higher Education," based on an Excel spreadsheet. It projects online or distance learning revenue for both synchronous and asynchronous systems. Academic or network administrators can key in various costs associated with course fees, networking line charges, hardware expenses, and faculty compensation and training. The worksheet also delivers a break-even analysis showing the costs over a three-year period.

With regard to budgeting for the technology and its implementation, Paul LeBlanc, president of Marlboro College and founder of the Center for Graduate Studies mentioned earlier, says that technology operating costs for online or distance education are on a par with physical plant costs — about nine percent — and should be regarded as just that, physical plant operating costs.

Chris Dalzeil, executive director of the Instructional Telecommunications Council in Washington, DC, says the costs of OE&T are generally about the same as those for classroom-based training, exclusive of the costs of technology. When budgeting, she recommends building in the labor and personnel costs associated with the new technologies — help desk or support, increased instructional design and development costs, delivery systems, library services, instructor training, ongoing professional development, and so forth. She cautions against thinking of OE&T as a way to save money, or to cut curriculum costs. "That's not the right reason to offer online education," she says. "Rather, it should be thought of as a tool to extend the instructional mission."

In the final analysis, productivity measurements are probably the best resource for measuring training results. Productivity looks at throughput, and most learners ought to be given before-and-after assessments. Accrued benefits must also be weighted, such as learners who become power users or mentors in their home departments.

As W. Edwards Deming, the father of the modern productivity methods and the total quality management (TQM) movement said, "Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs." This implies that everyone in the company — and that includes both the trainer and the trainee — should understand their role in the process, and constantly work towards the company's goals to increase sales, improve productivity, and strive for near-perfect quality.

Remember, it's a journey, not a destination, but we need every pilgrim working together along the way.

Scenario: A manufacturer makes a major shift to OE&T training. A global manufacturer of transportation equipment was faced with an increasingly serious problem: its product manufacturing cycle was too long, and profits were suffering. In attempting to solve the problem, the company looked at all work processes. Over a period of forty years, the people processes had changed little; however, almost all the manufacturing processes were automated. They decided it was the people processes that needed re-engineering.

All technical jobs, and almost all assembly line jobs, required training, both in the classroom and on-the-job. Classes were scheduled to begin every six weeks, and OJT was assigned to supervisors and skilled workers, which impeded carrying out their normal duties. Management realized that improving training processes could not only deliver a more skilled worker to the plant floor more quickly, but potentially a worker who could "hit the ground running" as well.

The solution posed by the corporate training department was to combine classroom education with on-the-job training and to expedite its delivery using a new training method. The result was a multimedia course taught over the company intranet with an accompanying self-study CD-ROM. The corporate training people worked with the instructional technology people to design and script the online education and training package, complete with videos of key training sequences, all delivered via the corporate broadband network from an intranet Web site.

One educational component involved using PCs, necessitating a crash course in Lotus Notes for most of the new hires. In order to fill this need, the company went to an online education and training company for delivery of the training. Learners completed tutorials, from beginning to advanced, in the training classroom. The course's online discussions gave them the necessary experience to begin using Notes almost immediately, in effect taking them from the virtual to the real within days.

This solution took the company from "batch" to "online" education and training. Although the final dollars-and-cents results won't be in for a while, the company is already finding it is getting workers into the workstream faster, and supervisors report that productivity definitely on the uptick.

Scenario: OE&T training as a supplement to the corporate classroom. A small systems integration house developed a web-based software productivity package using the large-scale, proprietary neural network it had developed in-house. The company believed they would be selling the productivity software as an OEM package to a web businesses, so was taken by surprise when another systems integrator wanted to license a version of the neural net application for its own wireless product. And they wanted it now. Suddenly, the smaller firm needed to add about twenty percent new staff and ramp up for a major revision of its neural net.

These new staffers needed to know C++, Oracle database and SQL, Java, and UNIX network administration. Not only was that daunting in itself, but they had to get up to speed almost at once, since the delivery date for the new system was just six weeks away. Corporate trainers realized there was no way to both hire and train all these people quickly and efficiently, so they turned to an online education and training provider. This proved to be a wise decision.

As soon as a new person was hired, he or she was given an account with the OE&T provider and instructions to get up to speed on whatever areas they needed help with. Some learned at home, studying until they were needed; others spent part of the day at work, then went to the training lab to log onto their course. The training people were always standing by to provide additional support as needed. In the end, the systems house was able to incrementally hire all the people it needed, get each thoroughly trained, and complete the project on schedule.

Scenario: OE&T as an employee benefit. There's an old adage that when you have mastered your job, you should either ask for more responsibility or move on. Many employees will strive to excel and get ahead in their work, no matter what. But education and training are expensive: lifelong learning courses often cost as much as $600, and textbooks average $50-75. The employer who offers employees desirable training and education not only gets a better educated employee, but one that is promotable and often more loyal in the bargain. Consider: Sharon was a mid-level manager at a large mail-order clothing company. She had a two-year liberal arts degree from a community college. Sharon was good with people, and her department head wanted to put her in charge of a new project. However, she lacked project management experience and he thought she could use a few other business courses, such as accounting and report writing. Knowing that completing three courses in evening school could take at least a year, he suggested that Sharon look into some online education and training resources, offering to reimburse her for the costs.

She found an online education and training resource where she could enroll in a project management software training course. She learned she could take as many courses as she liked for one fee, so she signed up for a spreadsheet course as well. Sharon also found an online college specializing in self-study business courses leading to an MBA degree, and she enrolled in the two courses her manager suggested.

Four months later, Sharon had gained the knowledge her manager sought and he promoted her to the project lead position of the new team. She decided to continue her education, learning several more software packages, and decided to continue on with her undergraduate business degree. Although the MBA is still a few years away, for Sharon it is certainly in sight.

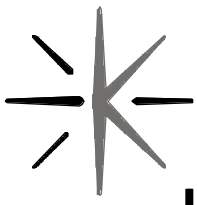
Taking an Online Course at Element K: the Nuts and Bolts

An Element K class is very similar to a regular college class. It has an instructor and learners; it has a course outline and often a textbook; it runs for a specific number of weeks. An "Element K week" starts on Monday and runs until midnight the following Sunday, Greenwich Mean Time (GMT). And there is a classroom, although it is a virtual classroom.

In other ways, an Element K class is quite different. Learners aren't graded. An Element K class takes place through messages (instead of email) posted in the virtual classroom, which is itself a discussion forum within Element K's Web site. In this forum, the instructor posts messages with instructions for the learners, class "lectures," and assignments. The learners post messages containing questions or comments on various aspects of the course content for the instructor, as well as for each other. They also use messages to submit completed homework. In this respect it's very much like a real classroom discussion. Everyone in the class can read any or all the messages, and they remain on view after class.

Learners don't have to be in the classroom at a specific time of day, or even on any particular day. Instead, they log in when it's convenient, read the class messages, and post their own messages. If learners need to spend a few extra days on a particular assignment, or if they can't log in on a certain day, they don't have to worry about falling behind. All the lectures and exchanges between the instructor and learners will still be there when they return to class.

Barring unforeseen delays, class instruction ends one week before the course catalog end date. Both the classroom and the class café remain open for another week following the end of instruction (i.e., until the end date specified in the course catalog). This last week after formal instruction ends is called "closing week" and its purpose is to give learners a chance to read through the last of the classroom messages, wrap up any final discussions, and move further discussions to the lounge. Once the class is complete, Element K begins processing CEU credits and course completion certificates.



elementk

500 Canal View Boulevard
Rochester, NY 14623
1-800-434-3466
www.elementk.com

80-141-48
4/00