

## **Advances in Learning:**

### **Computer-based Training Provides Advantages for Employers**

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Computer-based training, whether delivered on a CD, company network or over the Internet, offers some important advantages to managers over classroom training. It provides a consistent learning environment that can be administered with the least disruption to the normal workload. Training can be done individually, at a comfortable pace, and the new material tested and reviewed until it is mastered.

### **Disadvantages of Classroom Teaching**

Classroom or one-on-one teaching is expensive. Individual teaching requires the full attention of the teacher for one student. Classroom teaching makes better use of the instructor's time, but requires scheduling an entire group of people and a fully equipped classroom that may not be at the place of work. Often some students will be unable to attend the class, leaving them untrained until another class is scheduled.

Classroom training is essential when some element of a skill must be demonstrated live. Teachers also provide close supervision for groups with low discipline and short attention spans, like school children.

However classroom teaching has some psychological disadvantages for adults. It works well when students are highly motivated, but otherwise people will tend to tune out the class. Classroom teaching is most effective for those who are neither faster or slower learners than the average for the class.

Classroom teaching is particularly poor when trainees believe they will not be tested at the end. When companies go to the trouble of gathering a class of people, who may perhaps be at different seniority levels, it is awkward to administer public testing in which junior people might surpass their bosses. Yet without testing, motivation to learn drops off.

Testing also tends to be at the end of the class. Students with poor results are left knowing that they have not mastered the material. There is usually no alternative but to repeat the class. This is also embarrassing to employees.

### **Advantages of Computer-based Training**

Computer-based training (CBT) is fair, consistent and measurable. There are no differences between different instructors and less equipped classrooms. The material covered is always the same. This is very valuable for documenting the training of a large group of people over time. It is valuable when training is being delivered over a large geographical area. It can also be useful where a group of people are being trained to be trainers, ensuring that precisely the same information will be passed on to their students.

Training modules can be supplied to new recruits immediately, without the need to wait for the next scheduled class. This eliminates safety liabilities or wasted time. In the case of web-based modules, the lessons can be accessed even from home.

Computer-based training is self-paced. Since individuals learn at different speeds, a particularly quick learner or someone who already knows the material is not frustrated. Pre-tests can quickly stream learners to the level at which new information is introduced.

Trainee satisfaction with computer-based training tends to be high. Trainees are not embarrassed to privately cover the lesson a second or third time before taking the test. They can also review the material again after missing test questions and then retake the test.

Trainees can rest when they have had enough new concepts for one day, or if work intrudes. The computer-based lesson can be either be continued at their convenience, or they can just start at the beginning again. When they feel they have mastered the material, they can take the test and view the results. Depending on the results, they can review or move to the next topic.

### **Self-paced Until Information Mastered**

Students repeat this train-test-review-test cycle until they can pass the test at an acceptable, predetermined, level. All master the information. There is no failure, only an on-going effort. People tend to enjoy non-punitive, self-paced learning. Trainees cannot sit back and coast through the class as they can in a classroom. There must be some effort on their part to pass the test.

Information that might be considered dull can be enlivened with animated characters and interactive special visual or aural effects.

The interactive and self-directed aspects of computer-based training is motivating and satisfying to trainees. The successful completion of a course of training makes an employee feel valuable to his employer and may even improve employee satisfaction with the job.

Intermittent testing during a training session keeps the trainee's attention on the material. Some research shows that this results in improved retention. To be precise, the interactive tutorial-test approach using multi-media materials has a retention rate double that of instructor-led or print-based training. Retention is 25% higher than with non-interactive video training (Wharton, 1990).

The successful completion of a test level is recorded in the database so that the manager can verify and document that each person assigned to training has completed it. Trainees can receive tests that differ from tests given to co-workers, so that there is no standard answer key to be shared.

Computer-based training can also provide other information useful to managers, depending on what is required, such as the time needed to pass sections of the material. Managers can monitor on-going progress or failure to proceed. Re-training can be repeated on a calendar cycle, according to certification or licensing requirements. New hires can be immediately set up with the computer-based training course.

Some training situations are best addressed through computer-based training. Activities involving expensive, dangerous or unavailable equipment can be simulated using diagrams or animations. On-line applications can be learned through tutorials embedded in the software. Training in abstract scientific concepts can be modelled with interactive models of the processes involved.

## Costs Compared: Classroom vs. Computer-based

Computer-based training offers some spectacular cost savings over classroom training. Travel, instructor, classroom and incidental costs are eliminated.

Consider the example below, where an outside consultant is contracted for training in a training classroom outside the workplace. The classroom instruction occupies the workers for a half-day instead of the duration of the lesson. The amount for classroom rental and for the instructor's travel and preparatory time is very conservative. Replacement labour is set at \$18 per hour for this example.

Classroom (consultant) training class:

20 persons (@ \$49 each)	\$980
Replacement labour (4 hrs)	\$1,440
Materials/classroom	\$120
Preparatory/travel time	<u>\$ 45</u>
TOTAL	\$2,585

Computer-based training:

20 persons (@ \$30 /license)	\$600
Replacement labour (2 hrs)	\$720
Materials/classroom	N/A
Preparatory/travel time	<u>\$ 20</u>
TOTAL	\$1,340

In this example, the classroom training costs twice as much as the computer-based training. If one or more employees are absent or called away for any reason, the total classroom costs must be incurred again, where the computer-based training can be continued at the students' convenience until it is mastered.

Since new hires can be trained immediately, liability issues are avoided. Experienced employees don't have to be pulled from their work to do individual training if computer-based courses are available.

**The quality of a corporate training program impacts the competitive advantage of a company over the long term.** An effective training program has a measurable effect on both employee retention and customer satisfaction. Training levels are documented and fair. The employee and his supervisor know his level of mastery of the material, his peers don't. When the employee training is proven to be complete and up-to-date, everyone is satisfied, including the customer.