



TenStep Supplemental Paper

7 February 2004

Computer-Based Training Basics

The rapid growth of computer technology, particularly digital multimedia, has resulted in the emergence of computer-based training (CBT) as a popular training delivery system. Computer-based training involves delivering instruction and testing trainees on their ability to understand content and perform tasks. CBT provides the necessary stimulus for the learner to respond, resulting in increased skills or knowledge. The level, order and pace of instructional delivery are determined by the trainee's inputs. CBT judges the trainee's inputs, provides feedback, and branches the trainee to other instructional elements according to the trainee's level of understanding and performance.

Most computer-based training programs incorporate one or more techniques.

Techniques

- **Tutorial.** This is used to introduce new information that must be taught in a sequential manner. It is useful for teaching factual information, rules and simple application of rules.
- **Drill and practice.** This provides opportunities for practice when mastery of a new skill or information is desired. It should be used after initial instruction.
- **Training games.** These supplement other instructions and are used to provide motivating and engaging opportunities for practice after a skill or new information is taught. The technique capitalizes on the competitive interests of learners and adds entertainment value to instruction.
- **Simulation.** This is most often used when practicing a skill in its real context is too costly or dangerous. It provides an opportunity for experimentation and allows students to test assumptions in a realistic context. It builds realism and relevance into the training situation.
- **Problem solving.** This is a challenging technique used to help trainees develop skills in logic, problem-solving, and following directions, and is generally used to augment higher order thinking skills.
- **Demonstration/presentation.** This is best used to support the introduction of new information. It is also used as a review tool.

Advantages of Good Computer-Based Training Classes

- **Immediate feedback.** The immediate feedback provided by CBT on the progress made by the trainee allows both the instructors and trainee to monitor progress and adjust instructions accordingly.
- **Avoid unnecessary training.** CBT can accommodate each individual's needs by "branching" to the level of training that is appropriate for that individual.



TenStep Supplemental Paper

- **Greater retention.** CBT's multi-sensory delivery system (i.e., integration of text, graphics, video and sound) can facilitate greater retention of new knowledge. This is particularly true when many concepts are presented and current concept mastery is dependent on the mastery of earlier concepts.
- **Cost effective.** After the initial costs, the organization has a 24 hour per day trainer which can teach any number of trainees at the same time. CBT may also reduce or eliminate travel for trainees and lessen the total cost of the training.
- **Works with adult population.** The computer is non-judgmental and non-threatening. It provides privacy that reduces learners' embarrassment about taking "remedial" classes or making mistakes while answering questions in the training.
- **Self-paced, flexible and individualized.** Trainees can work at their own paces, and the computer can always match the trainee's schedule.
- **Tireless.** CBT meets the need for round-the-clock training.
- **Increased control over training activities.** CBT provides consistency in training in terms of quality and information presented, and standardization of training.
- **Reduces resource requirements.** It gives a higher trainee-to-trainer ratio where the instructor serves as facilitator, assisting trainees as needed. There is less need for a centralized training facility.
- **Improves job performance.** CBT trains people in specific skills for specific performance and in general skills that broadly affect general performance. It provides increased access to information tools for decision-making.

Computer-based training is not, however, the answer to every training need. Some information is easily understood and retained in a CBT deliver format. Some types of training are best taught through other delivery mechanisms. It is also true that some people do not respond well to training on a computer. However, for many subjects and for many people, CBT can be an effective delivery mechanism for providing a common training experience.