Technology-Based Instruction

Technology-based instruction or E-learning is simply using technology to deliver training and educational materials.   The two most popular choices are delivery over the Internet or on CD-ROM.

Regardless of how much it is praised delivery of instruction over the Internet or on CD-ROM will not completely eliminate classroom training. What is important to know is what advantages and disadvantages exist and when the use of E-learning is appropriate.

Well-designed E-learning can:

- Reduce overall cost,
- Reduce learning times,
- Increase retention,
- Increase consistency in instruction,
- Capture expert knowledge,
- Automate the proof of completion and certification of learning, and
- On demand availability

The disadvantages of E-learning are:

- The up front development costs,
- Requires a substantial technical infrastructure,
- Requires larger teams to design,
- Requires management of resources beyond the training organization
- Inappropriate subject matters for E-learning, and
- Reduced social and cultural interactions

E-learning is well suited for providing basic information and achieving performance objectives in the lower levels of the cognitive domain of learning. Psychomotor skills require repeated practice and feedback for mastery. They are not suited for E-learning. Teaching learners new attitudes (affective domain) requires the instructor to provide direct and indirect feedback through praise, rewards and recognition and through modeling the behavior and is not suited for E-learning. Cognitive skills are best suited for E-Learning because they can be communicated to learners using language, text, numbers and symbols.

Highly structured problems (clear right or wrong answers) that require transferring knowledge, building comprehension and practicing the application of skills is appropriate for E-learning without a human instructor. When performance objectives present the learner with ill-structured problems (no clear right or wrong answer) that require application, analysis, synthesis and evaluation of information and shared experiences E-learning must be coordinated with human instruction to be successful.

To determine if E-learning alone is appropriate consider the domain of learning and the level of performance expected of the learners.   E-learning is very appropriate in conjunction with other delivery methods. For example if the performance objective is to teach learners how to plan an agricultural waste management system, the basic information necessary to complete the plan can be delivered over the Internet or on CD-ROM. The ability to actually bring all the information together in an acceptable plan will require classroom instruction coordinated with the E-learning.