Chapter Eight
Technology-Based
Training Methods
Objectives

- Explain how new technologies are influencing training
- Evaluate a Web-based training site
- Explain how learning and transfer of training are enhanced by using new training technologies
Objectives

© Explain the strengths and limitations of e-learning, mobile technology training methods (such as iPads), and simulations

© Explain the different types of social media and the conditions conducive to their use for training

© Describe to a manager the various types of distance learning

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Objectives

- Recommend what should be included in an electronic performance support system
- Compare and contrast the strengths and weaknesses of traditional training methods versus those of technology-based training methods
- Identify and explain the benefits of learning management systems
A Few Statistics

- 15% of training hours are delivered in a virtual classroom; 29% are delivered online.
- 39% of learning hours involve technology-based training methods.
- 79% of companies are using learning management systems.
- 36% of large companies deliver training online, compared to 28% of small companies.
Technology’s Influence

- Employees have greater control over when and where they receive training
- Employees have greater access to knowledge and expert systems
- The use of avatars, virtual reality, and simulations make training “real”
- Employees can choose the media they like best
Technology’s Influence

- The administration of training can be conducted electronically
- Training accomplishments can be easily monitored
- Training can be easily delivered to trainees
Technology-Based Methods

- E-Learning
- Webcasts
- Podcasts
- Mobile Learning
- Blended Learning
- Wikis
- Distance Learning
- Social Media
- Shared Workspaces
- RSS Feeds
- Blogs
- Microblogs
- Discussion Boards
- MOOCs
- Adaptive Training

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Technology Facilitates Collaboration

- Digital collaboration can be synchronous or asynchronous
  - Synchronous communication refers to trainers, experts, and learners interacting live and in real time
  - Asynchronous communication refers to non-real time interactions—learners access information and resources when they desire them
Dynamic Learning

- Greater interaction between learners and content, trainers, and other learners
- Trainers serving more as resources and coaches
- Experts and resources becoming a part of the learning environment
- More training via social media
- More training via games and exercises
Features of Online Learning

- Content—content may include text, video, graphics, and sound

- Collaboration and sharing—collaboration and sharing can help reinforce content

- Links to resources—access to other training methods and electronic performance support
Features of Online Learning

- Learner control—learners can control what, when, how, and with whom they learn
- Delivery—delivery may include internet, intranet, distance learning, and CD-ROM
- Administration—online administration of enrollment, monitoring, and trainee progress
Online Effectiveness

- Online is more effective than face-to-face for declarative knowledge
- Online and classroom are equally effective for procedural knowledge
- Learners are equally satisfied with online and classroom instruction
- Online is better than classroom when there’s learner control, practice, and feedback
Online Effectiveness

- Online is better than classroom for long courses
- Online and classroom are equally effective when similar methods are used
- Trainees who benefit most are those who devote more time
- Online learning is not effective for learners with low technology self-efficacy
Needs Assessment

- Evaluate if the organization has the technological infrastructure to deliver training, provide learning resources, and offer technical support

- Assess if trainees possess the skills for online learning
Rapid Prototyping

- Rapid prototyping could be used to design a program.

- Refers to an iterative process where initial design ideas are proposed and provided in rough form in an online working prototype.
  - The prototype is then reviewed and refined.
Refrain from Repurposing

- Trainers should avoid repurposing.
- Repurposing refers to *directly* translating a face-to-face program to an online format.
- Repurposing will likely result in ineffective training.
Create a Learning Environment

- Include visuals and text
- Explain complex visuals with audio or text, rather than by both
- Omit extraneous visuals, words, and sounds
- Engage learners through conversational language agents
- Explain key concepts prior to full instruction
Create a Learning Environment

- Provide prompts for self-regulation
- Provide content in short sequences
- Connect modules to engage learners
- Provide exercises that parallel the work environment
- Distribute exercises within and among modules
- Provide explanations to responses on quizzes and exercises
Learner Control

- Do not allow trainees to control the amount of feedback they receive
- Provide practice repeatedly using different high fidelity examples
- Allow trainees to control the sequence to receive instruction but not to skip
- Prompt self-regulation
Time & Space

- Ensure employees are given time and space for online learning
- Managers need to give employees time in their schedules for training, and employees need to schedule training time away from distractions
- Employees should not be required to fit online learning into already busy schedules
MOOCs

- Massive open online courses (MOOCs) are courses designed to enroll large number of learners, which are free and accessible to anyone with internet access

- More companies are working with MOOC providers to design custom courses
Advantages of MOOCs

- Low cost, accessible, and diverse topics
- Engaging short lectures combined with interaction
- Emphasize application using role plays, cases, and projects
- Learning is semi-synchronous
- Many offer college credit and certificates of completion
Limitations of MOOCs

- Participation tends to drop off after two weeks
- Completion rates are low, and most students who do complete courses do not take the credential exam
- May not be appropriate for courses where synchronous collaboration is needed
Social Media

- Social media take many forms:

- Networking Sites (Facebook, LinkedIn)
- Microblogs (Twitter)
- Blogs (Wikipedia)
- Shared Media (YouTube)
Social Media

- Social media can be useful for:
  - providing links to resources
  - determining training needs with tagging
  - reinforcing and sustaining learning
  - coaching and mentoring
  - linking learners
  - engaging younger employees
  - providing content before a face-to-face learning event
Blended Learning

Traditional Methods

Technology-Based Methods
Blended Learning

- Blended learning combines online learning, face-to-face instruction, and other methods.

- Offers the positive features of face-to-face instruction and technology-based delivery, while minimizing the negative features of each.
Blended Learning

- In comparison to pure classroom learning, blended learning:
  - provides increased learner control
  - allows for self-directedness
  - requires learners to take more responsibility
  - is better for teaching declarative knowledge or information
Blended Learning

- In comparison to pure technology-based learning, blended learning:
  - provides more face-to-face social interaction
  - ensures that instruction is presented in a dedicated learning environment
  - provides live feedback, which is preferable to feedback received online
Food for Thought

Interestingly, trainees prefer classroom instruction to blended learning, perhaps because blended courses may be more demanding.
The Flipped Classroom

- The flipped classroom is a popular application of blended learning.

- The classroom is designed for interaction and application; lecturing occurs online.

- Instructional content is delivered online and activities, including those that may have traditionally been considered homework, are moved to the classroom.
Games & Simulations

- Branching story—trainees are presented with a story, make decisions, and progress based on decisions
- Interactive spreadsheet—trainees are given a set of business tools and make decisions
- Game-based—trainees play a video game
- Virtual—trainees interact with a computer representative of the job
Consider the following when designing games:

- What is the business objective?
- What behavior or tasks will be learned?
- How many levels and players?
- Will everyone have access to the same technology?
- Is the game fun and engaging?
- Does the game provide feedback and leaderboards, meters, or badges?
Advantages of Simulations

- There is no need for a centralized training location
- There is meaningful and engaging content
- They provide a consistent message
- They can safely put employees in situations that would otherwise be dangerous
- They can yield positive outcomes in a shorter amount of time
Limitations of Simulations

- High development costs
- Absence of human contact
- Difficulty for first-time users
- May not be taken seriously by all learners
Mobile Technology & Learning

- It is an easy way to communicate up-to-date information to employees
- It can be useful for enhancing transfer by providing follow-up
- It brings training to employees who are mobile
- Learners can complete training on their own time and pace
Adaptive Training

- Training that customizes content based on a trainee’s learning style, ability, personality, or performance
- Adaptations include variety, difficulty, and sequencing of content and practice
- Instruction changes based on trainees’ scores on assessments completed before training or throughout training
Distance Learning

- Distance learning is used by geographically dispersed companies and features two-way communications between people.
- Involves teleconferencing and individualized, computer-based training.
- Interactive Distance Learning (IDL) uses satellite technology to broadcast and allows trainees to respond to questions using a keypad.
Distance Learning

- Guidelines for developing a virtual classroom:
  - test technology before the first class
  - design short modules and assignments
  - make learning interactive and interesting
  - include media such as video and audio
  - limit classroom size to 25 or less
  - offer learners multiple ways of interacting with others
Technology for Training Support

- Technological support is needed when:
  - performance is infrequent
  - the task is time-consuming and difficult
  - the consequences of error are severe
  - information and procedures frequently change
  - employee turnover is high
  - little time and few resources for training
  - employees are responsible for their learning and performance
Expert Systems

- Expert systems organize and apply the knowledge of experts to specific problems

- Used when problems and decisions exceed an employee’s current skill set

- Help employees make sense of different conditions and keep track of tasks to be completed
Expert Systems

- Expert systems have three elements:
  - a knowledge base that includes facts, figures, and rules
  - a decision-making capability that draws conclusions from this information to solve problems
  - a user interface that gathers and gives information to the user
Electronic Performance Support Systems

- An EPSS is an electronic infrastructure that captures, stores, and distributes knowledge throughout an organization
  - Enhances performance in the fastest time possible with minimal support from others
- Includes all software needed to support work, beyond one or two applications
Learning Management Systems

- LMSs are technology platforms that automate the administration, development, and delivery of all a company’s training programs.

- LMSs centralize the management of learning activities, track regulatory compliance, measure training usage, assess employee performance, and determine training needs.
What’s Best?

- Simulations, games, and adaptive training are suited for complex processes.
- Online training and MOOCs are suited for facts, figures, cognitive strategies, and interpersonal skills.
- If realistic, online training and simulations can be useful for interpersonal skills.
- Mobile learning is best suited for facts.
- Mobile learning and social media are best used as supplements to live training.
When Should Technology be Used?

- There is an adequate budget and resources
- Trainees are geographically dispersed and travel costs would be high
- Trainees are comfortable with technology
- Use of new technology fits into the organizational culture or business strategy
- Employees would have a difficult time attending traditional training