**Chapter Eight**

**Technology-Based Training Methods**

**OBJECTIVES**

1. Explain how new technologies are influencing training.

2. Evaluate a Web-based training site.

3. Explain how learning and transfer of training are enhanced by using new training technologies.

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

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

6. Describe to a manager the various types of distance learning.

7. Recommend what should be included in an electronic performance support system.

8. Compare and contrast the strengths and weaknesses of traditional training methods versus those of technology-based training methods.

9. Identify and explain the benefits of learning management systems.

**MULTIPLE CHOICE**

8.1. Which of the following statements is true of technology’s influence on training and learning?

1. New technologies have increased the administrative costs associated with delivering training.
2. New training technologies will totally replace face-to-face instruction.
3. New technologies give employees access to and control of their own learning through relationships and collaborations with others.
4. New technologies have made training less lifelike.

Answer: c

Difficulty: medium

Learning objective: 1

8.2. \_\_\_\_\_ allow synchronous communication in training.

1. Live online courses
2. Self-paced courses on CD-ROMs
3. Virtual libraries
4. E-mails

Answer: a

Difficulty: easy

Learning objective: 1

8.3. Which of the following is not true regarding the effectiveness of online learning?

1. Online instruction is more effective than face-to-face learning for declarative knowledge.
2. Online instruction is better than classroom instruction for procedural knowledge.
3. Trainees who benefit most are those who take more time and practice more.
4. Online learning is not effective for all learners, particularly those with low computer self-efficacy.

Answer: b

Difficulty: medium

Learning objective: 3

8.4. Which of the following is a disadvantage of online learning?

1. Some trainees may not be motivated to learn through technology.
2. Online learning is ineffective for training that emphasizes cognitive outcomes.
3. Online learning fails to link learners to other content, experts, and peers.
4. Updating online learning is extremely difficult.

Answer: a

Difficulty: easy

Learning objective: 3

8.5. To create a positive online learning experience, \_\_\_\_\_.

1. content that is unrelated to the learning objectives should be included
2. the use of multiple types of media should be avoided as they may be distracting
3. there should be prompts to promote self-regulation
4. modules should be fairly long to promote overlearning

Answer: c

Difficulty: medium

Learning objective: 4

8.6. \_\_\_\_\_ refers to directly translating an instructor-led, face-to-face training program to an online format.

1. Repurposing
2. Rapid prototyping
3. Self-directedness
4. Webcasting

Answer: a

Difficulty: easy

Learning objective:

8.7. \_\_\_\_\_ refers to the learner’s involvement with the training material and assessing their progress toward learning.

1. Repurposing
2. Rapid prototyping
3. Metacognition
4. Self-regulation

Answer: d

Difficulty: easy

Learning objective:

8.8. Online training is best provided \_\_\_\_\_.

1. during the trainees’ personal time
2. during breaks in the trainees’ normal workday
3. at the employee’s desktop without time away from the job
4. with one- to two-hour training modules rather than a full-day training session

Answer: d

Difficulty: medium

Learning objective: 4

8.9. YouTube is a typical example of \_\_\_\_\_.

1. a shared workspace
2. shared media
3. a microblog
4. an online chat room

Answer: b

Difficulty: easy

Learning objective: 5

8.10. A \_\_\_\_\_refers to software tools that enable communication in short bursts of text, links, and multimedia through stand-alone applications or through online communities

1. blog
2. wiki
3. microblog
4. shared media

Answer: c

Difficulty: easy

Learning objective: 5

8.11. The use of social media as a learning tool will be ineffective in a company that \_\_\_\_\_.

1. has a significant number of Millennials
2. requires substantial teamwork
3. requires centralized decision making
4. has geographically dispersed employees

Answer: c

Difficulty: medium

Learning objective: 5

8.12. Which of the following is not a benefit of MOOCs?

1. Completion rates are high.
2. They are low cost, accessible, and cover a wide range of topics.
3. Learning happens through engaging short lectures combined with interaction with the course material, other students, and the instructor.
4. They emphasize applying knowledge and skills using role plays, cases, and projects.

Answer: a

Difficulty: medium

Learning objective: 1

8.13. In comparison to classroom delivery, blended learning has increased \_\_\_\_\_.

1. involvement of the instructors
2. face-to-face interactions
3. self-directedness among employees
4. learner’s dependency on the instructor

Answer: c

Difficulty: medium

Learning objective: 4

8.14. In a(n) \_\_\_\_\_ type of simulation, trainees are presented with a situation and asked to make a decision that enables them to progress through the simulation.

1. decision-making
2. branching story
3. virtual lab
4. interactive spreadsheet

Answer: b

Difficulty: easy

Learning objective: 4

8.15. In a virtual lab type of simulation, trainees \_\_\_\_\_.

1. interact with a computer representation of the job for which they are being trained
2. are given a set of business rules
3. enter their decisions into a spreadsheet that shows how the decisions affect the business
4. are presented with a situation and asked to make a choice or decision

Answer: a

Difficulty: easy

Learning objective: 4

8.16. The use of simulations has been limited by their \_\_\_\_\_.

1. inability to incorporate situations that a trainee might encounter
2. inability to be used on a desktop computer
3. need for employees to travel to a central training location
4. high development costs

Answer: d

Difficulty: medium

Learning objective: 4

8.17. Which of the following is an advantage of simulations?

1. Simulations provide learning situations with a high degree of human contact.
2. Trainees do not have to acquire any prior knowledge while playing a game.
3. Simulations can safely put employees in situations that would be dangerous in the real world.
4. Compared to most other training methods, development costs are lower.

Answer: c

Difficulty: medium

Learning objective: 4

8.18. \_\_\_\_\_ is a computer-based technology that provides trainees with a three-dimensional learning experience.

1. Podcasting
2. Virtual reality
3. Webcasting
4. Shared media

Answer: b

Difficulty: easy

Learning objective: 4

8.19. Which of the following is a disadvantage of training through virtual worlds?

1. It is ineffective for employees who are not in the same location or country to have access to training.
2. It has no scope for teamwork exercises and group problem solving.
3. It is inappropriate for learners totally new to the work world, as it may confuse and overwhelm them.
4. It fails to provide a place to meet with trainers, managers, or other employees who can serve as teachers.

Answer: c

Difficulty: medium

Learning objective: 4

8.20. Which of the following is a disadvantage of distance learning?

1. Travel costs for the company
2. Weather conditions and satellite glitches
3. The inability to bring content experts into a classroom
4. One-way communication between people

Answer: b

Difficulty: medium

Learning objective: 6

8.21. \_\_\_\_\_ are used as a support tool that employees refer to when they have problems or decisions that they feel exceed their current knowledge and skills.

1. Expert systems
2. Virtual worlds
3. Branching stories
4. Virtual labs

Answer: a

Difficulty: easy

Learning objective: 7

8.22. \_\_\_\_\_ allow companies to track the number of employees who have completed courses that are required to meet state, federal, or professional regulations.

1. Expert systems
2. Learning management systems (LMSs)
3. Intelligent tutoring systems
4. Supply chain systems

Answer: b

Difficulty: easy

Learning objective: 9

8.23. Which of the following statements is true of learning management systems (LMS)?

1. An LMS helps companies understand the strengths and weaknesses of their employees, including where talent gaps exist.
2. If a company wants to develop an LMS, it needs to have an online learning environment that is under the control of the instructors.
3. The major reason that companies adopt an LMS is to decentralize the management of learning activities.
4. An LMS increases a company’s costs related to training.

Answer: a

Difficulty: medium

Learning objective: 9

8.24. Which of the following technology-based training methods has a relatively low development cost?

1. Virtual reality
2. Mobile learning
3. Intelligent tutoring system
4. Adaptive training

Answer: b

Difficulty: easy

Learning objective: 4

8.25. Which of the following technology-based training methods provides the least opportunity for learner-instructor interaction?

1. Virtual reality
2. Mobile learning
3. Social media learning
4. Blended learning

Answer: b

Difficulty: easy

Learning objective: 4

**TRUE-FALSE**

8.26. New training technologies are unlikely to totally replace face-to-face instruction.

Answer: true

Difficulty: easy

Learning objective: 1

8.27. There are no generational differences in preferences for using and realizing the potential benefits of social media tools.

Answer: false

Difficulty: easy

Learning objective: 5

8.28. Interactive video is ineffective for trainees to learn technical and interpersonal skills.

Answer: false

Difficulty: easy

Learning objective: 4

8.29. In distance learning, trainees do not have control over the content and speed of learning.

Answer: true

Difficulty: easy

Learning objective: 6

8.30. Online learning courses should be designed for the available bandwidth on the company’s system.

Answer: true

Difficulty: medium

Learning objective: 4

8.31. In general, repurposing is not considered an advisable strategy for developing online learning.

Answer: true

Difficulty: easy

Learning objective:

8.32. Online learning that merely repurposes an effective live training program will usually result in effective training.

Answer: false

Difficulty: medium

Learning objective:

8.33. With respect to maximizing the benefits of learner control, programs should allow trainees to control the amount of feedback they receive.

Answer: false

Difficulty: medium

Learning objective:

8.34. Virtual reality allows simulations to become even more realistic.

Answer: true

Difficulty: easy

Learning objective: 4

8.35. Virtual worlds are ineffective for teaching interpersonal skills such as time management and leadership.

Answer: false

Difficulty: medium

Learning objective: 4

8.36. One of the most significant benefits of adaptive training is easily matching customizations to learners’ specific needs.

Answer: false

Difficulty: medium

Learning objective: 1

8.37. Distance learning features a one-way communication for training.

Answer: false

Difficulty: easy

Learning objective: 6

8.38. Teleconferencing refers to asynchronous exchange of audio and video between two or more individuals.

Answer: false

Difficulty: easy

Learning objective: 6

8.39. Training support technologies assist in transfer of training by providing employees with information not covered in training.

Answer: true

Difficulty: medium

Learning objective: 7

8.40. A major reason that companies adopt a learning management system (LMS) is to decentralize management of learning activities.

Answer: false

Difficulty: medium

Learning objective: 9

8.41. Although development costs for technology-based training programs are high, costs for administering these programs are low.

Answer: true

Difficulty: medium

Learning objective: 4

8.42. The key defining characteristic of a flipped classroom is that control over the content of lectures is “flipped” from the instructor to student.

Answer: false

Difficulty: medium

Learning objective: 1

8.43. The flipped classroom reverses the traditional learning arrangement by delivering instructional content online outside of the classroom and moves activities, including those that may have traditionally been considered homework, into the classroom.

Answer: true

Difficulty: easy

Learning objective: 1

8.44. In online training, an instructor can provide detailed feedback.

Answer: true

Difficulty: medium

Learning objective: 4

8.45. No single training method is inherently superior to other methods.

Answer: true

Difficulty: medium

Learning objective: 4

# **SHORT ANSWER-ESSAY**

8.46. Describe the ways the use of new technology has benefited training and learning.

New technology has changed and improved training and learning in many ways:

* 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 enable the learning environment to look, feel, and sound more like the work environment.
* Employees can choose the type of media that they want to use in training.
* The administration of training can be conducted electronically.
* Employee training accomplishments can be more easily monitored.
* Training can be delivered to trainees, rather than trainees coming to a centralized training location.

Difficulty: medium

Learning objective: 3

8.47. Describe strategies for designing an online environment that is most conducive to facilitating a positive learning experience.

Principles for creating a positive online learning experience include:

* Including visuals and words with instruction
* Aligning text with visuals
* Explaining complex visuals with audio or text, rather than by both
* Omitting extraneous visuals, words, and sounds
* Socially engaging learners through conversational language agents
* Explaining key concepts prior to full instruction
* Providing prompts that encourage self-regulation
* Providing content in short sequences over which learners have control
* Connecting modules in a way that engages learners
* Providing activities and exercises that parallel the work environment
* Distributing exercises within and among modules
* Providing explanations to responses on quizzes and exercises

Difficulty: medium

Learning objective:

8.48. Describe recommendations for maximizing the benefits of learner control.

Research provides several recommendations for maximizing the benefits of learner control:

* Programs should *not* allow trainees to control the amount of feedback they receive. Trainees may rely too much on feedback, which may reduce long-term retention.
* Programs should offer practice on each topic repeatedly throughout the program to ensure retention.
* Programs should provide practice using different high fidelity examples to help transfer.
* Trainees should be allowed to control the sequence in which they receive instruction but not be able to skip practice.
* Programs should prompt self-regulation, prompting trainees to recall key points, reflect, and set goals.

Difficulty: medium

Learning objective:

8.49. Critique the effectiveness of blended learning. Consider blended learning relative to pure classroom learning and blended learning relative to pure technology-based learning.

Blended learning combines online learning, face-to-face instruction, and other instructional methods. Blended learning courses provide learners with the positive features of both face-to-face instruction and technology-based delivery, while minimizing the negative features of each.

In comparison to pure classroom learning, blended learning:

* provides increased learner control
* allows for self-directedness
* requires learners to take more responsibility for their learning
* is better for teaching declarative knowledge or information about ideas or topics

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

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

Difficulty: medium/hard

Learning objective: 8

8.50. Under what conditions should managers and trainers consider using new technology training methods?

Technology-based training methods should be used under the following conditions:

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

Companies must recognize the strengths and weakness of traditional and technology-based training methods. Technology-based methods can provide consistent delivery to employees who are geographically dispersed and need to work at their own pace. Face-to-face instruction is appropriate when the focus of training is on the application of content, discussion, and interaction among trainees. It is important to highlight that only a few research studies have examined the effectiveness of technology-based training methods.

Difficulty: medium

Learning objective: