Webcast/Web-based/Computerized Courses – Pros and Cons

Issues to Consider with all Training Approaches

Purpose of this presentation

- To provide a list of criteria by which to evaluate a given training medium
    - And by which to compare it to other media

- To discuss these criteria in terms of "Pros" & "Cons"
    - Specifically with regard to web and computer-based training

Some issues to consider when deciding upon a training approach

- Accessibility
- Cost
- Development and instructional time
- Level of interaction
- Learning outcomes and skills transfer

Accessibility (with regard to web-based training)

- Pros
  - Personnel can participate in training from their desks

  - A greater number of personnel can potentially attend a training

Accessibility

- Pros (Cont'd)
  - Web-based training can be accessed at the student's convenience

  - Personnel can participate in a training and still accomplish other tasks during a given day

Accessibility

- Cons
  - It may be hard to concentrate on a course when one is in his/her office or cubicle
    - Due to the interruptions
      - Phone
      - Colleagues
      - Crises

  - There is the potential for training to be steadily pushed down the priority list

Accessibility

- Cons (Cont'd)
  - Agency leadership must create a positive environment in which effective training can occur
    - With regard to a dedicating time for training
    - Setting up a separate training room (if possible)
    - Conveying that training is a priority

Cost

- Pros
  - Reduces the need to pay for travel costs
    - Cost can then be measured with regard to money saved
      - Also, travel time saved
        - And, also savings of the costs associated with having an employee out of the office attending a course

  - Once an agency purchases computer terminals for its personnel, the personnel then have access to all of the available on-line training courses

Cost

- Cons
  - The cost of developing and maintaining computer networks can be high
    - A centralized infrastructure will need to be developed and funded to create a national web-based program
    - New equipment will need to be purchased on a regular basis to keep pace with the changing technology

  - Agencies may need to purchase new computers and software in order for their personnel to receive and benefit from all of the on-line instructional units

Development and instructional time

- Pros
  - For instructors, the advantage of web-based training is flexibility
    - Flexibility in adding links and instructional units to their course design
    - Flexibility in interacting with students
      - By e-mail
      - Through chat groups
      - In threaded discussions and Q & A sessions
      - By telephone (when necessary)

  - Instructors also have the flexibility of providing feedback and interaction at times when it is best for them

Development and instructional time

- Cons
  - Development time and costs will be much greater when using web-based training

  - The instructors will likely need significant technical assistance to develop effective web-based courses

  - It may be difficult for instructors to adjust to the more unstructured nature of teaching a web-based course

Level of interaction

– When evaluating the effectiveness of a given training approach, level of interaction must be viewed in terms of:

- Interpersonal communication
- And, level of mental engagement with the course material

Level of interaction

- Pros
  - A web-based course can be designed to provide students with opportunities to:
    - Have one-on-one exchanges with the instructor
    - Participate in chat groups and review sessions
    - Follow threaded conversations and question and answer sessions

  - And, Web-based courses allow students to:
    - Read descriptions and course material
    - View demonstrations (computer & software permitting)
    - See theory and examples put into practice

Level of interaction

- Cons
    - The interactive features of web-based courses are designed to be approximations of the classroom and interpersonal experiences
        - In this sense, the classroom experience is viewed as the optimal one

    - The Cost of effective interaction will be measured in terms of:
        - Development and instructional time
        - Price of software, animation, interactive programs

Level of interaction

- Cons
    - The degree of drop-off from classroom learning (If there is one) must be determined
        - It is often said that an agency would rather train 100% of its staff with 75% effectiveness
            - Than train 40, 50, 60% of its staff with 100%

    - Considering the investment that will be made in this technology
        - The training community must know going in just how effective web-based training is going to be
            - Because while it certainly offers accessibility and convenience, it still must be an effective training approach

Learning Outcomes and Skills Transfer

- Regardless of the training media used, the goal of training does not change
  - That is, effective training must provide an individual with the knowledge and skills that will enable him/her to better perform his/her job responsibilities upon returning to work

Learning outcomes and skills transfer
(Cont'd)

- An strong argument can be made for unified, skills-based assessments across all training media
  - This way, we as the air pollution training community can see for ourselves which approach is most effective
    - In imparting information
    - In transferring problem-solving and analytical skills
    - In developing hands-on skills

Learning outcomes and skills transfer (Cont'd)

- The point is that all training needs to be effective

- And, that all training should result in the measured improvement of knowledge and skills
  - So, we need to establish exactly what we would like our personnel to know and to be able to do upon completing a given training course

  - And then directly test them on these things

Learning outcomes and skills transfer (Cont'd)

- So, in order to be able to make wise cost-benefit analysis decisions, we need to know exactly what the tradeoffs are with each training approach

- Adopting a unified, authentic assessment approach to testing would allow us to clearly evaluate the efficacy of any given training approach

Final thoughts

- It is clear that web-based training has the potential to be interactive, convenient and accessible

- However, assessments must be developed to establish its effectiveness as a training approach
  - And to allow us to compare its effectiveness to that of other approaches

  - And to enable the training community to make sound cost-benefit analysis decisions with regard to which training approaches (or combination of approaches) to use during tight fiscal periods

My contact information

Mike Gallo

Co-Principal Investigator/Program Administrator

Rutgers Air Compliance Center

Rutgers University

migallo@rci.rutgers.edu

(732) 932-7715 (voice mailbox option #1)