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 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
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
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