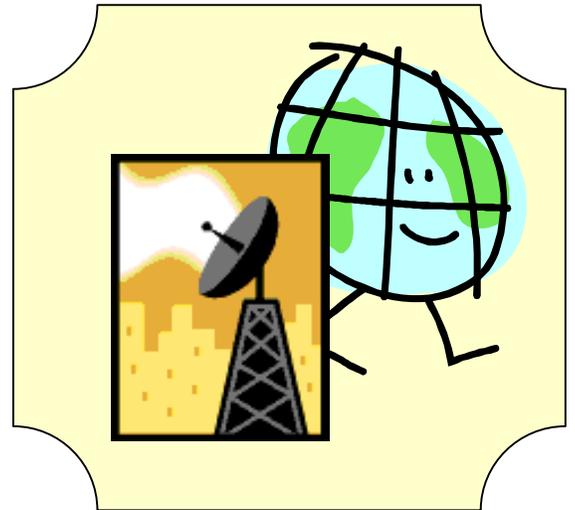


# TRAINING MORE STAFF WITH LESS MONEY

## TRAINER GUIDE

NCEA/NAPSA  
STATE TRAINERS'  
CONFERENCE ON  
DISTANCE LEARNING



This training is a product of National Center on Elder Abuse (NCEA), which is funded, in part, by the U.S. Administration on Aging under Grant # 90-AM-2792. The project was developed by the National Adult Protective Services Association (NAPSA), and its contractor, the REFT Institute, Inc.



**National Adult Protective  
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**The National Center on Elder Abuse**  
**The Source for Information and Assistance on Elder Abuse**

The National Center on Elder Abuse (NCEA) provides elder abuse information to professionals and the public; offers technical assistance and training to elder abuse agencies and related professionals; identifies promising practices; conducts short-term elder abuse research; and assists with elder abuse program and policy development. NCEA's website and clearinghouse contain many resources and publications to help achieve these goals.

The Center is administered by the National Association of State Units on Aging as the lead agency and funded by grant No. 90-AP-2144 from the U.S. Administration on Aging. NCEA consists of a consortium of six partner organizations.

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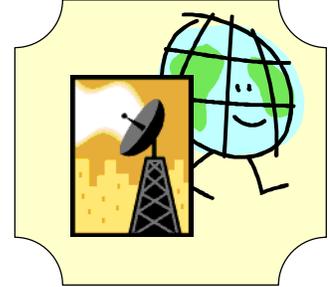
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## **COURSE OUTLINE**

<b>Content</b>	<b>Total time</b>	<b>Activities</b>	<b>Slides/Pages</b>
	10 min.	<b>Linking into Audioconference</b>	
<b>Welcome and Introductions</b>	20 min.	Lecture introductions	
<b>Overview of Distance Training</b>	15 min.	Lecture	Slides 1-10 Pages 8-15
<b>Audioconferencing</b>	60 min.	Lecture Exercise	Slides 11-18 Pages 16-24
<b>BREAK</b>	10 min.		
<b>Computer Conferencing</b>	60 min.	Lecture Exercise Q/A	Slides 19-32 Pages 25-39
<b>BREAK</b>	10 min.		
<b>One-Way Videoconferencing</b>	35 min.	Lecture Exercise	Slides 33-41 Pages 39-47
<b>Two-Way Videoconferencing</b>	55 min.	Lecture Exercise Q/A	Slides 42-49 Pages 48-56
<b>BREAK</b>	10 min.		
<b>Next Steps</b>	90 min.	Lecture Exercise Q/A	Slides 50-55 Pages 57-62
<b>TOTAL TIME</b>	<b>6.25 hrs.</b>		

## TRAINING GOALS AND OBJECTIVES



### TRAINING MORE STAFF WITH LESS MONEY

**Goal:** To improve Adult Protective Services and State Unit on Aging trainers' ability to provide cost-effective training to a widely scattered and diverse trainee base.

**Objectives:** Upon completion of this training session, participants will be better able to:

- ◆ Define distance training.
- ◆ Describe technology options.
- ◆ Identify strategies for adapting traditional training activities to a distance training environment.
- ◆ Identify resources for further knowledge and support.

## TRAINER GUIDELINES

### Teaching Strategies

The following instructional strategies are used:

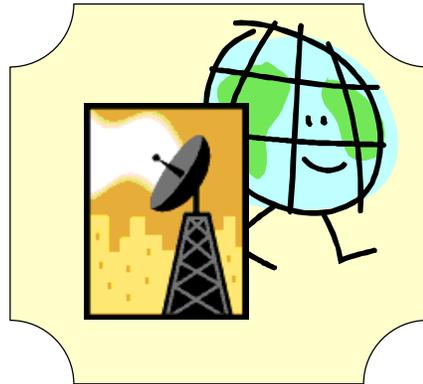
- ◆ Lecture segments
- ◆ Interactive exercises (e.g., case study, small group discussion)
- ◆ Question/answer periods
- ◆ Slides
- ◆ Participant guide (encourages self-questioning and interaction with the content information), including resources
- ◆ Pre-/post-tests to assess learning
- ◆ Evaluation to assess training process

### Materials and Equipment

The following materials are provided and/or recommended:

- ◆ Computer with LCD (digital) projector
- ◆ CD-ROM containing slide presentation for module
- ◆ Overhead projector and transparencies (as backup, if computer/LCD projector not are used)
- ◆ Easel/paper/markers/masking tape
- ◆ Teleconferencing equipment and services, as needed (e.g., telephone, outside line, microphones – see appropriate technology section for details)
- ◆ Trainer's Guide: This guide includes the course overview, introductory and instructional activities, and an appendix containing reference materials and a glossary
- ◆ Participant Guides: This guide includes a table of contents, course introduction and all training activities
- ◆ Nametags/name tents

# PRESENTATION



## LINKING INTO THE AUDIOCONFERENCE



**TIME ALLOTTED: 10 minutes**

---

- ◆ At this time, off-site participants are linking into the conference via the bridging service provider (e.g., MCI Conferencing).
- ◆ Allow approximately 10 minutes for this activity.
- ◆ The conference operator can announce names as trainees or sites call in.

# WELCOME AND INTRODUCTIONS



**TIME ALLOTTED: 20 minutes**

---

- ◆ **WELCOME** participants and introduce yourself.
- ◆ **REVIEW GUIDELINES** for effective audioconferences:
  1. Explain the bridging service’s instructions (e.g., MCI) regarding how participants can notify the operator that they are experiencing a problem with the technology (e.g., get disconnected, can’t hear). Also give instructions regarding how to ask a question, participate in discussion, or solve technology problems [NOTE: Each bridging service has its own procedure, which varies depending on level of service; i.e., for operator assisted calls, the trainee may need to dial \*0 for technology problems, dial \*1 to ask a question or participate in discussion]. Finally, explain what participants should do if inadvertently disconnected from the call.
  2. Explain that participants should speak naturally and identify themselves when speaking.
  3. Ask that participants avoid side conversations with others in their offices and background noise, such as eating, chewing gum, or shuffling papers.
  4. Suggest that participants follow the instructions for their own telephone systems to disengage “call waiting” and suggest that they not put their telephones on hold – especially if the system has music or if there is a possibility of someone else in the office picking up the phone and dialing or talking.
  5. Ask participants to turn off cell phones or put them on vibrate.
  6. Explain that in audio conferencing with this many people, participants should write down questions as they come to mind. Time will be provided at the end of each segment for them to ask their questions. If their question is not answered at that time, provide information regarding who they might contact following the conference (e.g., via email) to get further information.
- ◆ **PARTICIPANT INTRODUCTIONS:** Call on each participant by name to state a brief self-introduction, including state, position held and training experience. Also ask that each participant respond, in 1 or 2 sentences, to the following question:

“If you could choose one key insight to share with individuals working directly with abused elders, what would it be?” Give participants a minute or so to think about their response before you begin calling on them.

## OVERVIEW OF DISTANCE TRAINING



TIME ALLOTTED: 15 minutes

---

### SLIDE 1

TRAINING MORE STAFF WITH  
LESS MONEY

NCEA/NAPSA State Trainers'  
Conference on Distance Learning



National Adult Protective  
Services Association



### NOTE TO TRAINER:

- At this point, you may want to instruct the operator to put callers in **Lecture/Listen Only mode**.
- It is also suggested that you notify participants that the call is now in **Lecture/Listen Only Mode** and remind them to hold questions until designated times.
- Referring to slide numbers throughout the training may help off-site participants keep up with the curriculum

### TOPIC: Training goals

1. Establish a **shared foundation of knowledge**; and
2. Provide enough information to enable trainees to **converse knowledgeably** with technology service providers, instructional designers and others who might be involved in the development and implementation of a distance training program.

# TRAINING MORE STAFF WITH LESS MONEY

---

## SLIDE 2

This training material was prepared for the *National Center on Elder Abuse* by the **REFT Institute, Inc.** on behalf of the *National Adult Protective Services Association*, a partner in the National Center on Elder Abuse.

This project was supported by a grant # 90-AM-2792 from the *Administration on Aging Dept. of Health and Human Services*.

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slide 2

### **TOPIC: Training development**

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## SLIDE 3

THE NATIONAL CENTER ON ELDER ABUSE  
*The Source for Information and Assistance  
on Elder Abuse*

### **PARTNERS**

- National Center on Elder Abuse — National Association of State Units on Aging
- National Adult Protective Services Association
- Clearinghouse on Abuse and Neglect of the Elderly (CANE)
- Commission on Law and Aging — American Bar Association
- National Committee for the Prevention of Elder Abuse

slide 3

### **TOPIC: Partners**

- ◆ Partners in this project include:
  - National Center on Elder Abuse – National Association of State Units on Aging
  - National Adult Protective Services Association (NAPSA)
  - National Committee for the Prevention of Elder Abuse (NCPEA)
  - Clearinghouse on Abuse and Neglect of the Elderly (CANE)
  - American Bar Association Commission on Law and Aging

## SLIDE 4



CAUTION:  
New ideas  
...assembly required

slide 4

### \* *Food for Thought slides*

**NOTE TO TRAINER:** “Food for Thought” slides are intended to encourage trainees to think about ideas presented in this curriculum as “**possibilities**” and **to consider what they’ve been doing in a new light.**

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment or ask a rhetorical question.

However, for the benefit of off-site participants, you may want to read these slides aloud (or refer to them in some other way), in order to let participants know which slide you are presenting to the on-site audience.

## SLIDE 5

DEFINING DISTANCE  
TRAINING



slide 5

## SLIDE 6

### VOCABULARY

- **Distance training delivers instruction to trainees physically separated from instructor in space and/or time**
- **Teleconferencing = e-conferencing = electronic communication**
  - Includes audio, video and computer conferencing
- **“Real time” vs. delayed communication**

slide 6

### TOPIC: Vocabulary

- ◆ **Distance education** = delivery of instruction to learners physically separated from the instructor in space and/or time and generally refers to the academic environment (e.g., K-12, college level education).
- ◆ **Distance training** generally focuses on job-related skills and competencies.
- ◆ **“Real time” interaction** is communication between individuals at the same time (e.g., via telephone). **Delayed communication** provides individuals the opportunity to learn on their own time (e.g., via CD-ROM).
- ◆ **Teleconferencing** (often referred to as e-conferencing) = electronic communication between individuals or groups. Teleconferencing includes *audioconferencing*, *videoconferencing*, and various forms of *computer conferencing*. More in-depth definitions are found later in the curriculum. This training session will focus on three categories of teleconferencing:
  - In this training session, it will not be possible to demonstrate any of the technologies other than audioconferencing. Enough details are provided to give you a basic understanding of how each type of technology works, its special advantages and challenges, and some ideas regarding how you might use it in your training program.

## SLIDE 7

**DISTANCE TRAINING**  
Value

**INCREASES**

- ✓ Accessibility of training
- ✓ Audience size -- knowledge base
- ✓ Timeliness of communication
- ✓ Consistency of information
- ✓ Interactivity
- ✓ Shared sense of identity/unity
- ✓ Effective use of time and resources
- ✓ Quality of training

slide 7

### **TOPIC: Distance training – value**

- ◆ **Increases accessibility:** Generally can access from home or office.
- ◆ **Increased productivity:** Reduced travel results in more productive use of time.
- ◆ **Lowers costs:** Travel, meals, lodging costs reduced as travel time is minimized.
- ◆ **Increases audience:** More people can be trained.
- ◆ **Enables timely communication:** Depending on technology used, sites can be linked quickly for dissemination of time-critical information.
- ◆ **Increases consistency:** Dissemination of same message at the same time.
- ◆ **Expands the knowledge base:** Promotes cross-pollination – sharing of ideas across a broad audience.
- ◆ **Provides unity:** Promotes shared sense of identity; feel more connected to a group; reduces sense of professional isolation often experienced by professionals in remote areas. Communication between individuals, programs, projects improved as frequency of training and discussion increases.
- ◆ **Increases quality:** An overview of research on distance education indicates that outcomes of distance training are generally comparable to — and often better than — those of traditional classroom training and include increased comprehension and enhanced communication skills. [See **Research** in appendix for supporting materials.]

## SLIDE 8

### DISTANCE TRAINING Administrative Challenges

- **Costs**
  - Technical development
  - Instructional design
  - Buying/renting equipment
- **Potential fo technical problems**

slide 8

### **TOPIC: Distance training – administrative challenges**

- ◆ Depending on technology used, increased costs of developing for complex media, adapting existing training to new format, buying or renting equipment.
- ◆ The potential for technical problems and equipment failure.

## SLIDE 9

### DISTANCE TRAINING Personal challenges

- **Lack of familiarity with technology**  
- hesitancy to try something new
- **Lack of face-to-face (personal) contact**
- **The need for creative adaptation of traditional activities to a new platform**

slide 9

### **TOPIC: Distance training – personal challenges**

- ◆ Lack of familiarity or competency with the technology and hesitancy to try something new .
- ◆ Lack of personal, face-to-face contact.
- ◆ The need for creative adaptation of traditional activities to a new platform:
  - Practice drills
  - Demonstrations
  - Debates
  - Case studies
  - Problem-solving exercises
  - Role plays
  - Simulations
  - Stories
  - Games
  - Introspection/reflection

### Q/A

- ◆ Allow 20 minutes for asking questions.

### SLIDE 10 \* Food for Thought



"But...what is it good for?"

*Engineer at the Advanced Computing Systems  
Division of IBM, 1968 — commenting on the  
microchip*

slide 10

#### \* *Food for Thought slides*

**NOTE TO TRAINER:** "Food for Thought" slides are intended to encourage trainees to think about ideas presented in this curriculum as "**possibilities**" and **to consider what they've been doing in a new light.**

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment or ask a rhetorical question (e.g., "Do you feel this way when you need to learn a new type of technology?")

However, for the benefit of off-site participants, you may want to read these slides aloud (or refer to them in some other way), in order to let participants know which slide you are presenting to the on-site audience.

## AUDIOCONFERENCING



**TIME ALLOTTED: 60 minutes**

---

### **SLIDE 11**

#### AUDIOCONFERENCE Equipment

- Regular telephone or speakerphone
- Group conferencing equipment = increases clarity of sound
  - Mixer = balances sound, cancels echo and noise
  - Microphones and speakers

slide 11

### **TOPIC: Audioconference – equipment**

- ◆ Audioconferencing uses the telephone for two-way communication. Audioconferencing is similar to participating in an ordinary conference call.
- ◆ Trainer/trainees can use whatever telephone equipment they have available, including a regular handset, headset, or speakerphone; however, speakerphones may cause audio interference for other participants. Group conferencing equipment provides greater clarity of sound.
- ◆ Group conferencing equipment includes:
  - Audio mixer balances sound, cancels echo and noise.
  - Microphones and quality speakers.

## SLIDE 12

### AUDIOCONFERENCE Services

- On-site technician (*optional*) implements set up and ongoing monitoring of equipment
- Conferencing service provides:
  - Long distance service and link between trainer and trainees
  - Additional services/features, as needed

slide 12

### TOPIC: Audioconference – services

- ◆ Technician is needed when group conferencing equipment is used at the originating site. Responsibilities include equipment setup and sound monitoring throughout conference.
- ◆ A conferencing, or *bridging*, service (e.g., MCI, Sprint, AT&T and many smaller companies) provides long distance service, link between trainer and trainees, and other services, as needed.

## SLIDE 13

### AUDIOCONFERENCE Service Options

- Connection options and level of operator assistance vary by provider
- Features can include Lecture/Listen Only, Question/Answer, Interactive Modes, Subconferencing and other services
- Cost depends on # of lines, length of time, services provided

slide 13

### TOPIC: Audioconference – service options

- ◆ Conferencing services provide a variety of levels of service and features.
  - Options for connecting participants to the call vary by provider and can include dialing in (trainees and the training administrator pay charges), dialing in to an 800 number (training administrator pays charges), dial-out (administrator pays charges and service provider makes the call).
  - Levels of service and operator assistance vary by provider. For example, a call may be unassisted; have minimal operator assistance; or have a conference coordinator that remains on the line throughout the conference session.
  - Features vary as well and can include:
    - **Lecture/Listen Only Mode** = one-way communication, where the trainer speaks uninterrupted during some or all of the training session.  
In **Lecture/Listen Only** mode, trainees signal that they have a question, using the telephone keypad. With some service providers, callers can be placed in queue and questions can be screened by the operator, if desired.
    - **Interactive Mode** = two-way communication, where trainees hear the trainer, trainer hears trainees, and trainees hear one another.
    - **Subconferencing** = trainees at two or three sites are linked together by the operator, in order to participate in breakout sessions.
- ◆ The cost of audioconferencing varies among providers and depends on number of lines connected, duration of the session, and services provided.

## SLIDE 14

### AUDIOCONFERENCE Advantages

- Readily accessible
- Familiar equipment and technology
- Can interconnect unlimited # of sites
- Simple, relatively inexpensive
- Relatively trouble-free
- Fully interactive

\*\* On-site participants may or may not be present = trainer may be alone

slide 14

### **TOPIC: Audioconference – advantages**

- ◆ Audioconferencing offers several specific advantages:
  - Even the most remotely situated trainees can participate from their homes or offices, using readily available and familiar equipment, requiring little or no travel.
  - An **unlimited** number of sites and people can be interconnected.
  - Setting up an audioconference is simple, relatively inexpensive, and relatively trouble-free.
  - Fully interactive. However, the greater number of participants, the less time there will be for interaction.

NOTE: On-site participants may or may not be present (i.e., the trainer may be alone).

## SLIDE 15

### AUDIOCONFERENCE Applications

- Primarily lecture format
- Interaction important
- Many sites involved
- Cost is a factor

slide 15

### **TOPIC: Audioconference – applications**

- ◆ Good for training conducted primarily in lecture format, especially when supplemented by printed materials, audio/videotapes, or webconferencing (e.g., PowerPoint slides viewed via web). [NOTE: webconferencing will be discussed later]
- ◆ Good option when interaction among many trainees is top priority. Can be used effectively in small workshop and large conference settings, though interaction would be minimal in a very large conference.

## SLIDE 16

### AUDIOCONFERENCE Planning

1. Identify service provider and specific services needed
2. Make conference call reservation
3. Verify logistical details with service provider (e.g., how to dial in, handle technical issues, ask questions)
4. Send information to participants

slide 16

### **TOPIC: Audioconference – planning**

- ◆ The basic steps to planning an audioconference include:
  1. Comparing conferencing services.
  2. Finding out how technical problems are handled with each provider at each level of service.
  3. Making a reservation with the service provider.
  4. Verifying logistical details and sending the information to participants.
  5. Distributing training materials.
  6. Establishing backup plans.
- ◆ Greater detail regarding these steps is provided, along with guidelines for implementation, in the Appendix of the Participant Guide.

# TRAINING MORE STAFF WITH LESS MONEY

---

## SLIDE 17



### ACTIVE LEARNING #1

Small group discussion and large group sharing

*~ Using subconferencing as a teaching tool*

slide 17

### ACTIVE LEARNING #1

~ Using subconferencing as a teaching tool

**TIME: 25 minutes**

- 5 minutes to review instructions
- 5 minutes to link into subconferences
- 15 minutes discussion
- 5 minutes to link back into large group
- 15 minutes for debriefing discussion

### INSTRUCTIONS

- ◆ **Small group discussion:** Each site will be paired with two other partner sites in a subconference. Triads (groups of three sites) have been pre-arranged with the conference operator. Review what participants should do if, for any reason, a site finds itself not connected with a partner (e.g., contact technical support, work on the exercise alone).

Once each subgroup is connected, “teams” will have 15 minutes to discuss three questions, as they pertain to the given scenario. It is suggested that each team spend 5 minutes per question, and then move on to the next one, to assure that they have time to discuss all three questions. One person can be the recorder who keeps track of ideas.

On-site participants will be divided into groups of 3-4 people. They will have a somewhat longer period of time for discussion, since they do not need to be linked into subconferences.

- ◆ **SCENARIO:** You are the trainer in an audioconference setting. You are about to initiate subconferences, and your trainees are going to discuss a case study in small groups. Your outcome objective is for trainees to identify how they would bring a case of suspected abuse to law enforcement officers.

Today, in our subconferences, our task is not to create the case for law enforcement, but rather to roughly sketch out your training exercise for the subconferences. To guide you in this process, you might answer the following three questions. There are no “right” answers. [There is a worksheet in the Participant Guide.]

1. What initial steps should each subconference team take to ensure that their discussion leads to effective analysis of the case study?
2. What problems do you anticipate trainees will have in completing this exercise?
3. What can you (as the trainer) do to assist them in achieving the desired outcomes?

- ◆ **Large group sharing:** Once the large group is reformed, 3-4 sites may be asked to share their ideas.

**NOTE TO TRAINER:** If this scenario is not appropriate to the audience, each subgroup could identify their own training topic for the exercise.

### **NOTE TO TRAINER REGARDING LOGISTICS OF THE SUBCONFERENCE:**

- ◆ It is suggested that the logistics of breaking up into subconferencing triads (groups of three sites) be arranged prior to the training session\*. This would include sending a list of paired sites to the conference operator, as well as to all participants. On-site participants will be divided into groups of 4-5 people.
- ◆ It would also be helpful, prior to the conference, to decide which sites will be called upon to share responses to exercises. By deciding ahead of time, attention can be given to distributing responses across pairings and states, among single individuals and group sites, etc.
- ◆ At the beginning of the exercise, the operator must be notified. It takes at least 5 minutes (maybe longer) for the operator to connect all sites into subconferences. Once partnering sites are linked, they can begin the exercise.
- ◆ At the conclusion of the exercise, the operator must again be notified. It takes at least another 5 minutes to bring all sites back into the large group conference.

\* Breaking into subconferencing groups of three sites (rather than only two) will promote a greater opportunity for interaction, as some sites may have only one participant present.

Participants should be advised that subconferencing is not infallible. Technical problems do occur. Review the protocol for re-connecting (if disconnected) and contacting technical support (if necessary).

It is also suggested that participants be given a backup plan (e.g., if not connected in a subconference, work on the exercise alone or with others at their site).

### Q/A

- ◆ Allow 20 minutes for asking questions.

### SLIDE 18 \* Food for Thought



"This telephone has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."

*Western Union, internal memo, 1876*

slide 18

### \* *Food for Thought*

"Food for Thought" slides are intended to encourage trainees to think about ideas presented in this curriculum as "**possibilities**" and **to consider what they've been doing in a new light**.

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment (e.g., "I wonder what happened to that person's job!").

**10 MINUTE BREAK**

## COMPUTER TECHNOLOGIES



**TIME ALLOTTED: 60 minutes**

---

### **SLIDE 19**

#### COMPUTER CONFERENCE Options

- Email
- Computer-based training
- Web-based training
- Web conference
- Document sharing/collaboration

slide 19

### **TOPIC: Computer conference – options**

- ◆ Computer conferencing options are numerous and support different training goals.
  - Email, computer-based training, web-based training and some forms of web conferencing take place via delayed communication.
  - Document sharing/collaboration and some forms of web conferencing take place in “real time.”
  - Computer conferencing, with the exception of computer-based training, requires an Internet connection.
  - Email, document sharing/collaboration, and some forms of web conferencing are interactive technologies.
- ◆ “Real time” computer conferencing options are most commonly used in conjunction with audioconferencing.

## SLIDE 20

### EMAIL

- **Application**
  - Don't discount it – provides effective supplement to other training
    - Discuss content/training issues
    - Collaborate on training exercises (problem-solving, case studies, Q/A)
    - Submit written documents for review/feedback
  - Add personal tone – distribute bios/photos, informal chat

slide 20

### TOPIC: Email

- ◆ As compared to teleconferencing technologies, email is less effective as an interactive learning tool, but don't disregard the value of email as a supplemental tool in distance training. It can be used to support:
  - Exchange of questions and answers
  - Discussion of content and training issues
  - Collaboration on documents, problem-solving and decision-making activities
- ◆ Using e-mail, trainees (especially in ongoing courses) can get to know one another, providing a personal tone to other, less personal, distance training media.
- ◆ Email provides an inexpensive, quick and easy method of distributing information. Trainees can review written materials and submit required assignments.
- ◆ A variety of training courses have been taught using email as the primary or sole communications tool.

## SLIDE 21

### CBT (*Computer-Based Training*) Definition

- CBT accessed via computer disk (e.g., CD-ROM), hard drive or network
- Interactive learning experience between trainee and computer program
- Stimulus ⇨ response ⇨ feedback

slide 21

### **TOPIC: Computer-based training (CBT) – definition**

- ◆ CBT is accessed via computer disk (e.g., floppy, CD-ROM, DVD), hard drive or network. It offers an interactive learning experience between trainee and computer at the trainee's pace. Computer program provides stimulus, trainee responds, computer program analyzes response and provides feedback to the trainee. Can include links to related or deeper levels of information.

## SLIDE 22

### CBT Advantages

- 24/7 accessibility
- Interactive
- Trainees can control their learning
- Video/sound clips, animation, online help
- Unlimited time for learning → mastery of content
- Progress/testing results tracking possible

slide 22

### **TOPIC: CBT – advantages**

- ◆ 24/7 accessibility – trainees can access training when it is convenient.
- ◆ Interactivity – provides opportunities for practice, testing/assessment and feedback.
- ◆ Self-paced instruction – trainees control their own learning.
- ◆ Complex multimedia content can include video/sound clips, animation and online help.
- ◆ Unlimited timeframe allows for mastery of material – trainee can spend as much time as needed to fully learn the training material. Optional activities can provide extra help.
- ◆ Administrative function enables tracking of training progress and assessment results.

## SLIDE 23

### CBT Challenges

- Lacks face-to-face contact or interaction
- Development costs high
- Potentially brief shelf-life
- High degree of computer literacy required to develop CBT (or WBT) training materials
- Trainees must be computer literate

### TOPIC: CBT - challenges

- ◆ Significant time required to design and create a CBT module:
  - Doesn't allow for "real-time" training.
  - High development costs – development team potentially includes instructional designers, subject matter experts, scriptwriters, editors, graphic artists, and programmers.
  - Potentially brief shelf life, depending on how quickly the content information changes. In order to get a highly interactive, high quality product, an organization could spend thousands of dollars to develop a product that might be obsolete one year after CBT program distributed.
- ◆ Lacks face-to-face contact.
- ◆ Trainees must be computer literate.

## SLIDE 24

### CBT Applications

- Reach many people
- Trainees in remote locations
- Interaction important
  - Skills practice, multimedia simulation, role play, testing/ assessment
- Interaction between people not needed
- Trainees vary in levels of knowledge
- On-the-job training/reference

slide 24

### **TOPIC: CBT – applications**

- ◆ When many people must be reached.
- ◆ Trainees in remote locations (e.g., telephone and/or Internet access not available).
- ◆ Interaction with content important (e.g., response, feedback)
  - Skills practice
  - Multimedia simulations
  - Role plays, case studies
  - Testing or assessment
- ◆ Significant interaction between trainer and trainees (or among trainees) is not necessary (though training can be supplemented through other media).
- ◆ Trainees vary in their levels of current knowledge of the content material.
- ◆ On-the-job, “just in time” training and/or reference. Can be linked to a database.

## SLIDE 25

### WBT (*Web-Based Training*) Definition & Advantages

- WBT is essentially same as CBT, but accessed via a web site
- Additional advantages:
  - Information more easily updated
  - Unlimited # trainees can access training
  - Web links → deeper levels of info
  - Online help available

slide 25

### **TOPIC: Web-based training (WBT) – definition and advantages**

- ◆ Essentially the same as CBT except that it is accessed via a Web site.
- ◆ Additional advantages:
  - Can be relatively easily updated by the trainer or Webmaster.
  - Unlimited number of trainees can access training.
  - Can include links to related or deeper levels of information.
  - Trainees can access online help.

### SLIDE 26

#### WBT Challenges

- **Added challenges:**
  - Internet access required
  - Transmission quality for complex sound/images dependent on quality and speed of computer, telephone line, modem connection

slide 26

#### **TOPIC: WBT – challenges**

- ◆ WBT requires high level of computer sophistication on part of trainer, or temporary consultant, to supply content and interactivity required.
- ◆ Although CBT training is generally accessible to anyone with a relatively new computer (e.g., adequate memory, up-to-date platform such as Windows 98), access (via WBT) to complex multimedia graphics, sound and video is dependent on quality and speed of computer, telephone line, and modem connection.

### **SLIDE 27**

#### WBT Applications

- **Rapidly changing content**
- **Promotes learning & information exploration through related web links**

slide 27

#### **TOPIC: WBT - applications**

- ◆ **Rapidly changing content**
- ◆ **Research and exploration via related web links is important.**

## SLIDE 28

### WEBCONFERENCE (Netconference)

- Little agreement on terminology
  - one-way or two-way communication may include:
    - Sound/video broadcast – either real time or delayed
    - PowerPoint slides
    - Interaction – discuss/ask questions via phone, chat or email

slide 28

### **TOPIC: Web conference (net conference)**

- ◆ Little agreement on terminology. Web conferencing (or net conferencing) can refer to webcasts, webinars, document sharing, collaboration...may hear others terms as well.
  - Though “Webcast” is referred to by some as one-way communication, others use the term to describe two-way interaction. A webcast typically includes live or delayed broadcast.
  - “Webinar” usually refers to two-way communication. Participants typically type in a web address to see PowerPoint slides, and then call a conference call operator to hear the presenter (audioconference). The trainer can:
    - Control when each slide is viewed by participants
    - Use a pointer or write on slides
    - Type in a web address and everyone will see the same web page on their screens
  - Participants can send the trainer a question, using an instant message function, and the trainer can review them and select the ones to address either now, in the conference, or later via email.
  - This type of online meeting system is available from many vendors, including WebEx and PlaceWare. Trainees must have an Internet connection, but special software usually not needed.
  - Some vendors archive training sessions, allowing for 24/7 access.
  - States and locals with their own web sites can also use their own information and conduct the web seminar with internal resources and technical support. Slides and information could be available on the web site for 24/7 access.

## SLIDE 29

### WEBCONFERENCE

Document sharing/collaboration

- **Online connection of 2+ computers**
- **Files shared, copied, cut, pasted, saved or printed by any participant**
- **Need Internet connection and collaboration software**
- **Applications:**
  - Use in conjunction with audioconference
  - Trainees collaborate on project or document
  - Trainer can see trainees' work

slide 29

### **TOPIC: Web conference – document sharing/collaboration (online meeting)**

- ◆ Online connection of two or more computers, through which files can be transferred and information shared. Virtually anything that can be seen on one computer can be seen on the others (e.g., text documents, spreadsheets, databases, PowerPoint slides). This type of online meeting system is also available from many vendors. The most common is *Microsoft's NetMeeting*, which is available as a free download.
- ◆ Text or graphics can be highlighted, copied, cut, pasted, saved or printed by any participant in the conference.
- ◆ In a document sharing session (supplemented by an audioconference), the trainer and trainees can share applications such as *Microsoft Word*, exchanging control of the cursor to add and delete text.
  - Training uses include:
    - **Understanding a complex document such as legal requirements:** Navigating through a document by voice only can be challenging and time can be wasted reading sections to make sure everyone is looking at the right place. Instead, the trainer can point, circle, or otherwise mark text. Some systems allow control to be passed to the trainees when necessary. If a complex text document is revised, everyone can see the suggested language, and it can be sent to everyone as the meeting ends.
    - **Working on a spreadsheet together:** One person can change the number in a cell and the group can watch as the spreadsheet recalculates. They can then discuss the number, change it, and watch the result.
    - **Learning new software or database application:** Through online conferencing, training could be provided on how to use a new software program or database.
    - **Viewing a website together:** All trainees can view exactly the same page, since the trainer can control what is displayed on everyone's screen.

## SLIDE 30

### WEB CONFERENCE Planning

1. Assure equipment and software available at each site
2. Reserve conference time with service provider (*if necessary*)
3. Assure computer literate person available each site
4. Clarify logistics and send info to participants along with guidelines for participation

slide 30

### **TOPIC: Web conference – planning**

- ◆ The basic steps to planning a web conference include:
  1. Assure equipment and any necessary software available at each site.
  2. Reserve conference time with audio and/or video service providers (*as applicable*).
  3. Assure computer literate person available each site.
  4. Verify logistical details with service provider and send information to participants along with guidelines for participation (including protocol for asking/answering questions and participating in discussion).
- ◆ These steps are explained in greater detail in the Appendix of the Participant Guide.

## SLIDE 31



**ACTIVE LEARNING #2**

Large group discussion

*~ Audioconference with online document sharing and/or collaboration*

slide 31

## **ACTIVE LEARNING #2**

**~ Audioconference with online document sharing and/or collaboration**

**TIME: 15 minutes**

5 minutes to review instructions  
20 minutes discussion

## **INSTRUCTIONS**

- ◆ **Open discussion:** We're going to conduct this exercise as a large group and will open up the lines for discussion in **Interactive Mode**. [Review guidelines for participating in discussion, including how to dial in and reminding participants to state their name and location before speaking, if that service is not provided by the operator.]

**DISCUSSION QUESTION:** Of the training you have conducted in the past, what session might have been a good candidate for an audioconference supplemented with online document sharing and/or collaboration.

*[solicit open discussion, allowing 20 minutes for sharing of responses – you may want to alternate between calling on on-site and off-site participants]*

**Q/A**

- ◆ Allow 20 minutes for asking questions.

**SLIDE 32** \* Food for Thought



"I think there is a world market for maybe five computers."

*Thomas Watson, Chairman of IBM, 1943*

slide 32

\* **Food for Thought**

"Food for Thought" slides are intended to encourage trainees to think about ideas presented in this curriculum as "**possibilities**" and **to consider what they've been doing in a new light.**

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment (e.g., "Amazing how short-sighted we humans are sometimes?").

**10 MINUTE BREAK**

## ONE-WAY VIDEOCONFERENCING



**TIME ALLOTTED: 35 minutes**

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### **SLIDE 33**

VIDEOCONFERENCE  
Options

- **ONE-WAY** videoconferencing
- **TWO-WAY** interactive videoconferencing
  - Group videoconferencing equipment
  - Desktop or laptop computer

slide 33

### **TOPIC: Videoconference – options**

- ◆ Videoconferencing is a term that encompasses several very different experiences:
  - ONE-WAY videoconferencing
  - TWO-WAY interactive videoconferencing
    - Using group videoconferencing equipment
    - Using a desktop or laptop computer

## SLIDE 34

### ONE-WAY VIDEO Description

- Viewed on TV monitor or large screen
- Clear, full-motion image
- Unlimited number of people
- Unrestricted geographical area
- Ask questions or make comments via telephone, fax or email
- Can be taped ahead or transmitted in “real time”

slide 34

### **TOPIC: ONE-WAY Videoconference – description**

- ◆ Trainees view trainer on a TV monitor or large screen.
- ◆ Clear, full-motion image can be seen by an unlimited number of people in an unrestricted geographical area.
- ◆ Trainees can ask questions or make comments via telephone, fax or email.
- ◆ Programming can be taped ahead or transmitted in “real time.”
- ◆ Can be transmitted via cable, microwave and fiber optics – most common mode is satellite.

## SLIDE 35

### ONE-WAY VIDEO Equipment

- **Uplink:** Program origination → beams to orbiting satellite
- **Satellite:** Receives signal from uplink → beams back to downlink
- **Downlink:** Receives program
  - Satellite dish/antenna
  - Video receiver & converter
  - Television monitor or screen

slide 35

### TOPIC: ONE-WAY Videoconference – equipment

- ◆ Most common transmission mode is via satellite, though signal can be sent via cable, microwave, and fiber optics. Is similar to watching television – trainees receive broadcast on TV monitor or large screen.
- ◆ Equipment:
  - **Uplink:** beams signal from origination site to satellite. Charges, which may be included in production costs, include hourly charges for stationary or mobile uplink equipment, plus technician.
  - **Satellite:** receives signal from uplink and beams it back to the downlink sites. Satellite time is leased per hour. Uplink sites and service providers generally negotiate the satellite leasing arrangements.
  - **Downlink:** receives program. Many satellite downlink sites (including use of the satellite dish, video receiver and converter, and television monitor) available through hospitals, medical centers, community or junior colleges, and high schools that allow nonprofit organizations to use their downlink facilities free of charge.

## SLIDE 36

### ONE-WAY VIDEO Advantages

- Limitless number of sites
- Cost-effective for very large audience
- Accessible equipment
- Excellent visual quality
- Visual “presence” of instructor

slide 36

### **TOPIC: ONE-WAY Videoconference – advantages**

- ◆ Can provide transmission of a uniform message simultaneously to a large audience at a low cost per person — once the signal goes up to the satellite, it can be beamed down to any number of sites, anywhere within the satellite's range, at no extra cost. Can be a cost-effective means of providing distance training, if costs are spread out over a large number of trainees.
- ◆ Highly accessible equipment, in rural and urban areas, especially as compared to two-way videoconferencing.
- ◆ Excellent full motion picture quality. Provides opportunities to “transport” trainees to any location (e.g., university classroom, larger conference session, courtroom, clinic or counseling center).
- ◆ Provides visual and social “presence” of instructor.
- ◆ Trainees receive training in familiar television format.

## SLIDE 37

### ONE-WAY VIDEO Challenges

- High cost
- Requires sophisticated facilities, equipment, and technical expertise
- Communication basically one way: instructor to trainees
- Interactivity limited

slide 37

### **TOPIC: ONE-WAY Videoconference – challenges**

- ◆ Video production requires sophisticated facilities, equipment, and technical expertise.
- ◆ Communication is basically one way. Trainer cannot see trainees, and trainees can't see or interact with one another.
- ◆ Interactivity limited to telephone discussion, question/answer, simple yes/no or choice response, and is generally allowed only at designated times, due both to cost of keeping telephone lines connected and to logistical considerations.
- ◆ Further questions/answers can be discussed at individual sites by on-site facilitators or content experts, or communicated between trainee and instructor via follow-up telephone calls, mail, e-mail or fax.

## SLIDE 38

### ONE-WAY VIDEO Applications

#### THINK BIG!

- Very large, widely dispersed audience
- Full motion video needed
- Primarily lecture or dissemination of information

slide 38

#### **TOPIC: ONE-WAY Videoconference – applications**

- ◆ Disseminating updates or time-sensitive information
- ◆ Full motion video is necessary
- ◆ Widely-dispersed audience
- ◆ THINKING BIG is key.
  - The U.S. Department of Justice, National Institute of Corrections, conducted a satellite conference to reach 15,000 people at 287 sites. At a cost of \$12,000 for the broadcast, that works out to \$.80 per trainee.
  - K-Mart uses its satellite network to train 350,000 employees at 2,000 stores.

## SLIDE 39

### ONE-WAY VIDEO Planning

1. Reserve production facilities, uplink, satellite time, and space at downlink facilities
2. Arrange for technical support at all sites
3. Clarify logistics and send info to participants along with guidelines for participation & training materials

slide 39

### **TOPIC: ONE-WAY Videoconference – planning**

- ◆ The basic steps to planning a one-way videoconference include:
  1. Arranging for use of production facilities, uplink, and satellite time.
  2. Reserving space at downlink facilities.
  3. Assuring that a trained site coordinator or technician is available at each site.
  4. Verifying logistical details with service providers.
  5. Sending participants logistical information, guidelines for participation and training materials.
  6. Establishing a backup plan for each remote site.
- ◆ As with audioconferencing, these steps are explained in greater detail, along with guidelines for implementation, in the Appendix of the Participant Guide.

## SLIDE 40



**ACTIVE LEARNING #3**

Large group discussion

*~ Preparing for a one-way  
videoconference*

slide 40

### ACTIVE LEARNING #3

~ Preparing for a one-way videoconference

**TIME: 20 minutes**

5 minutes to review instructions  
15 minutes discussion

### INSTRUCTIONS

- ◆ **Large group discussion:** We're going to conduct this exercise as a large group and will open up the lines for discussion in **Interactive Mode**. [Review guidelines for participating in discussion, including how to dial in and reminding participants to state their name and location before speaking, if that service is not provided by the operator.]

**DISCUSSION QUESTION:** If grant funding were available to cover the costs of training APS professionals across the country via one-way videoconference, what topics might be appropriate for this communications medium and what are the reasons behind your suggestion?

*[solicit open discussion, allowing 20 minutes for sharing of responses – you may want to alternate between calling on on-site and off-site participants]*

## SLIDE 41 \* Food for Thought



"Everything that can be  
invented has been  
invented."

*Charles H. Duell,  
Commissioner, U.S. Office of Patents, 1899*

slide 41

### \* *Food for Thought*

"Food for Thought" slides are intended to encourage trainees to think about ideas presented in this curriculum as "**possibilities**" and **to consider what they've been doing in a new light.**

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment or ask a rhetorical question (e.g., "Does anyone still think this is true?").

## TWO-WAY VIDEOCONFERENCING



**TIME ALLOTTED: 55 minutes**

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### **SLIDE 42**

#### TWO-WAY VIDEO Description

- Fully interactive – trainer and trainees see one another and speak freely
- Desktop computers and group conferencing systems can be linked
- Digital signals sent via phone line
  - Greater compression → greater speed of transmission → greater distortion of images

slide 42

### **TOPIC: TWO-WAY Videoconference – description**

- ◆ Fully interactive –allows trainer and trainees to see one another and to speak freely.
- ◆ Desktop computers and group conferencing systems can be linked so that trainees can participate in any individual/group configuration.
- ◆ Though it can be transmitted via satellite, cable, microwave and fiber optics, is commonly provided by digital compressed (land-based) video technology. In digital compressed video:
  - The modem converts a digital signal to an analog signal, allowing computer images to be transmitted over an ordinary telephone line. (Digital telephone systems eliminate the need for a modem.)
  - Digital signals are compressed by a video codec (decoder). The more an image is compressed (i.e., more bits of information left out), the more distorted the image.
  - Signals are transmitted over circuits. The more information sent, the more bandwidth needed and the higher the cost. The more the signal is compressed, the less bandwidth it requires. Bandwidth is referred to as speed of transmission. Sending more information than a circuit can reasonably carry creates a delay in transmission.

### SLIDE 43

#### TWO-WAY VIDEO Equipment

- Can use desktop or group conferencing equipment:
  - Computer
  - Conferencing software
  - Camera, microphone, speakers

slide 43

#### **TOPIC: TWO-WAY Videoconference – equipment**

- ◆ Two types of systems:
  - Group stand-alone system used for group viewing
  - Desktop videoconferencing system used for viewing by 1 or 2 people
- ◆ Basic components of either system:
  - Computer
  - Conferencing software
  - Camera, microphone, speakers
- ◆ Desktop systems can produce good quality images. Major factors affecting picture quality are the network used and speed of the connection. DSL or cable modem connections will allow for larger picture sizes, higher resolution, and better synchronization.
- ◆ Group conferencing systems are able to send and receive larger, higher quality images than desktop systems. They require higher speed connection and bandwidth, and often use dedicated ISDN or T-1 lines leased from telecommunications companies. They offer a camera with greater control, allowing for zooming and panning the camera to focus on individuals or the group.

## SLIDE 44

### TWO-WAY VIDEO Services

- Need Internet connection
- Conferencing service provides:
  - Bridging between sites and long distance service
  - Additional services as needed
- Cost depends on # of sites, speed of transmission, location of sites, type of equipment, room charges

slide 44

### TOPIC: TWO-WAY Videoconference – services

- ◆ Need Internet connection. Although low speed connection works, motion is jerky. ISDN line or cable works much better.
- ◆ A conferencing, or *bridging*, service (e.g., MCI, Sprint, AT&T and many smaller companies) provides long distance services, link between trainer and trainees, and other services, as needed.
- ◆ Cost depends on many variables, including number of sites, rate of compression, speed of transmission, location of sites, type of equipment used, and videoconferencing room rental charges (if applicable).

## **SLIDE 45**

### TWO-WAY VIDEO Advantages

- Fully interactive – most resembles face-to-face training
- Visual “presence” & real-time interaction
- Full motion
- Cost-effective for small/mid-size audience (3-5 sites)

slide 45

### **TOPIC: TWO-WAY Videoconference – advantages**

- ◆ Fully interactive – this medium most resembles face-to-face training
- ◆ Fulfills trainer’s and trainees’ psychological needs for seeing one another – fosters open/collaborative training environment
- ◆ Full motion video (or nearly full motion, depending on compression rate)
- ◆ Cost-effective for small/mid-size audiences at 3-5 sites

### SLIDE 46

#### TWO-WAY VIDEO Challenges

- Reaches limited number of sites
- Digital transmission not available everywhere
- Cost considerably higher than for audioconferencing
- Picture quality inconsistent
- Computer literate person must be present

slide 46

#### **TOPIC: TWO-WAY Videoconference – challenges**

- ◆ Successful interconnection limited to about 3 - 5 sites. As more sites are linked, chance of equipment/network failure increases, and training considerations (e.g., keeping track of sites, interacting with multiple sites) increase in complexity.
- ◆ Requires digital transmission channels not available everywhere, especially in remote rural areas.
- ◆ Cost considerably higher than for audioconferencing.
- ◆ Picture is not same quality as satellite broadcast, but is adequate for most training purposes. Desktop videoconferencing video and audio are generally of lower quality than that of group stand-alone videoconferencing system.
- ◆ At least one individual at each site needs to be computer literate and comfortable with the technology, including trainer (or assistant) and trainees (or site facilitator).
- ◆ Desktop videoconferencing (i.e., on a desktop or laptop computer) is best used by only 1-2 people/site for relatively short periods of time, as screen is small and camera has small field of vision with minimal capability.

## SLIDE 47

### TWO-WAY VIDEO Applications

- **Highly interactive verbal and visual participation indicated by content such as...**
  - Demonstration, practice, testing or assessment, feedback regarding physical skill or technique

slide 47

### **TOPIC: TWO-WAY Videoconference – applications**

- ◆ Small groups and limited number of sites.
- ◆ When content suggests the need for highly interactive verbal and visual participation – for example:
  - when the trainer needs to see facial expressions or body language of trainees.
  - when training involves demonstration testing, assessment, or feedback regarding a physical skill or technique.
- ◆ Kaiser Permanente maintains a training network across the U.S. to over 200 sites and reaches over 30,000 people. They use it for rapid updates in health care, conduct regular Grand Rounds in specialty areas, provide continuing medical education for providers, staff training, and patient education.

## SLIDE 48

### TWO-WAY VIDEO Planning

1. Assure equipment available at each site
2. Reserve conference time with service provider
3. Provide technical support for all sites
4. Clarify logistics and send info to participants along with guidelines for participation & training materials

slide 48

### **TOPIC: TWO-WAY Videoconference – planning**

- ◆ The basic steps to planning a two-way videoconference include:
  1. Assuring that training room space and videoconferencing equipment is available for trainer and for each site.
  2. Contacting service provider to reserve conference time, if applicable.
  3. Ensuring that technical support is available for all sites, including trainees participating via desktop computer.
  4. Verifying logistical details with service provider.
  5. Sending participants logistical information and guidelines for participation.
  6. Distributing all training materials to trainees in advance.
- ◆ These steps are explained in greater detail in the Appendix of the Participant Guide.

## SLIDE 49



### ACTIVE LEARNING #4

Individual reflection and large group sharing

*~ Establishing a comfortable learning environment*

slide 49

### ACTIVE LEARNING #4

**~ Establishing a comfortable learning environment**

**TIME: 20 minutes**

- 5 minutes to review instructions
- 5 minutes for reflection
- 10 minutes of sharing

### INSTRUCTIONS

- ◆ **Reflection:** We're going to begin this exercise by taking 5 minutes for individual reflection and considering the following question:
  - What steps could you take to establish a comfortable learning environment for participants in a two-way videoconference?  
*[allow about 5 minutes for quiet reflection]*
- ◆ **Large group sharing:** Now we will open up the lines for sharing. [Review guidelines for sharing.]  
*[solicit sharing, allowing 10 minutes for sharing of responses – you may want to alternate between calling on on-site and off-site participants]*

**Q/A**

- ◆ Allow 20 minutes for asking questions.

**10 MINUTE BREAK**

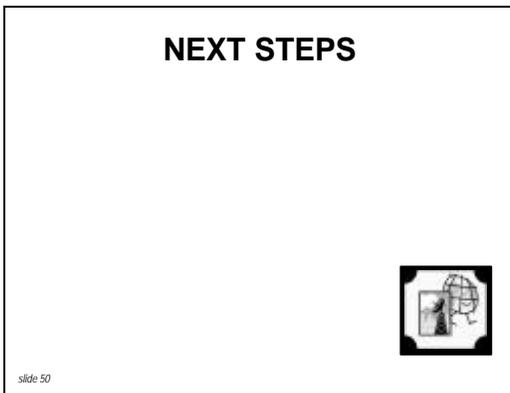
## NEXT STEPS



**TIME ALLOTTED: 90 minutes**

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**SLIDE 50**



## SLIDE 51

### NEXT STEPS

#### Key Considerations

1. Define audience
2. identify core competencies/learning objectives
3. Define training content
4. Select technology  
(e.g., fits objectives & budget)
5. Select teaching strategies  
(e.g., fit objectives & technology)
6. Identify site coordinators

#### **TOPIC: Next steps – key considerations**

- ◆ Comfort with distance training requires more than just understanding technology – requires willingness to take a risk and try something new and to creatively adapt teaching strategies to a new environment.
- ◆ Implementation begins by examining several key issues:
  1. Define audience
  2. Identify desired core competencies and learning objectives
  3. Define training content
  4. Select technology that supports achievement of objectives and fits within budget
  5. Select teaching strategies that will lead to achievement of learning objectives and can be adapted to selected technology
  6. Identify a coordinator for each site. Ideally, this individual should have some knowledge in content area, have good facilitation skills, and be comfortable with the technology being used.

## SLIDE 52



### ACTIVE LEARNING #5

Case study/small group discussion and large group sharing

~ *Selecting distance technologies*

slide 52

### ACTIVE LEARNING #5

#### ~ Selecting distance technologies

#### TIME: 60 minutes

- 10 minutes to review instructions
- 5 minutes to link into subconferences
- 20 minutes discussion
- 5 minutes to link back into large group
- 20 minutes to debrief

### INSTRUCTIONS

- ◆ **Small group/case study discussion:** Each site will now be paired with a new partner site in a subconference. Again, triads (groups of three sites each) have been pre-arranged with the conference operator. Explain what to do, if for any reason, a site finds itself not connected with a partner. On-site participants will be divided into groups of 3-4 people.
- ◆ Once each pair is connected, “teams” will have 25 minutes to discuss three questions, as they pertain to a given scenario. It is suggested that they spend 5-8 minutes per question, and then move on to the next one, to be sure they have time to discuss all three questions. One person can be the recorder who keeps track of ideas. When participants return to the full conference, it is suggested that 3-4 subgroups be called upon to report their thoughts.

**SCENARIO:** You are planning to deliver training to 25 frontline APS professionals in your state. Most have little training in the area of elder abuse. You have already determined that it is not feasible for all participants to travel to one site.

The focus of the training session is self-neglect. **Objectives** for the training session include the following:

- Identify common signs and causes of self-neglect
- Develop effective skills for interviewing an elderly client to determine potential causes for their self-neglect
- Construct an outline of next steps for the intervention process

*(continued next page)*

## TRAINING MORE STAFF WITH LESS MONEY

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### ACTIVE LEARNING #5

#### Selecting distance technologies

#### *INSTRUCTIONS (continued)*

- ◆ In breakout groups, the assignment is as follows:
  1. Identify three teaching strategies that you would use to support achievement of the outcome objectives.
  2. Identify two distance communication technologies that will support the training goals. (You can describe either two different training scenarios, each using a different type of technology, or describe one training scenario where one technology supports another.)
  3. Explain how you would adapt your teaching strategies for use with these technologies.
- ◆ Participants will have 20 minutes for this exercise. They should keep track of the time, allowing 5-8 minutes for each question. Each group should select someone to report back. [There is a worksheet in the Participant Guide.]
- ◆ **Large group sharing:** When the time is up, 3-4 (pre-selected) subgroups may be called on to share their responses.

**NOTE TO TRAINER:** If this scenario is not appropriate to the audience, each subgroup could identify their own training topic for the exercise.

### **NOTE TO TRAINER REGARDING LOGISTICS OF THE SUBCONFERENCE:**

- ◆ It is suggested that the logistics of breaking up into subconferencing triads (groups of three sites) be arranged prior to the training session\*. This would include sending a list of paired sites to the conference operator, as well as to all participants. On-site participants will be divided into groups of 4-5 people.
- ◆ It would also be helpful, prior to the conference, to decide which sites will be called upon to share responses to exercises. By deciding ahead of time, attention can be given to distributing responses across pairings and states, among single individuals and group sites, etc.
- ◆ At the beginning of the exercise, the operator must be notified. It takes at least 5 minutes (maybe longer) for the operator to connect all sites into subconferences. Once partnering sites are linked, they can begin the exercise.
- ◆ At the conclusion of the exercise, the operator must again be notified. It takes at least another 5 minutes to bring all sites back into the large group conference.

\* Breaking into subconferencing groups of three sites (rather than only two) will promote a greater opportunity for interaction, as some sites may have only one participant present.

Participants should be advised that subconferencing is not infallible. Technical problems do occur. Review the protocol for re-connecting (if disconnected) and contacting technical support (if necessary).

It is also suggested that participants be given a backup plan (e.g., if not connected in a subconference, work on the exercise alone or with others at their site).

## SLIDE 53 \* Food for Thought



"Heavier-than-air flying machines are impossible."

*Lord Kelvin, President, Royal Society, 1895*

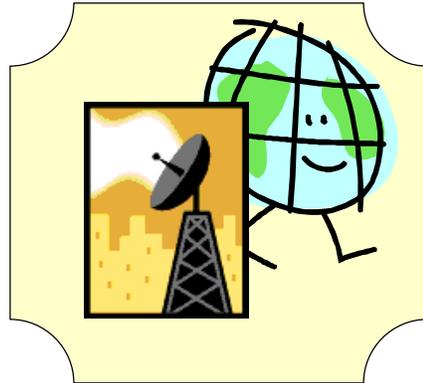
slide 53

### \* ***Food for Thought***

"Food for Thought" slides are intended to encourage trainees to think about ideas presented in this curriculum as "**possibilities**" and **to consider what they've been doing in a new light.**

The statements speak for themselves and may require nothing more than to allow a moment for reflection or, alternatively, you may want to make a comment (e.g., "By now, you may have realized that you can accomplish far more than you ever dreamed...take a risk...and have fun!").

# APPENDIX



**NEWS ARTICLE: AUDIOCONFERENCING REACHES LARGE AUDIENCE**

**10,000 LISTEN IN ON WORLD'S LARGEST CONFERENCE CALL**

**The Associated Press**

**-- Published March 30, 2004**

GOLDEN, Colo. (AP) - A Colorado company says it has earned a Guinness world record by arranging the world's largest conference call. "This is a major feat in the conferencing business," said Gene Warren, chief executive of ACT Teleconferencing.

Herbalife used Golden-based ACT Teleconferencing to introduce an estimated 10,637 sellers worldwide to a new line of diet products during a call last week. Not a single caller was unable to get in because ACT operators used software to reroute calls from countries that didn't have enough lines, Warren said.

Two telecom analysts are verifying the feat for Guinness, ACT said. If Guinness agrees, the call will break the record set by former presidential contender Howard Dean, who spoke to 3,466 supporters on Sept. 29, 2004.

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## APPENDIX

### **SAMPLE CALL-IN INSTRUCTIONS FOR AUDIOCONFERENCING (sent to participants prior to conference)**

**NCEA/NAPSA State Trainers' Conference on Distance Learning  
TRAINING MORE STAFF WITH LESS MONEY  
Denver, Colorado, July 16, 2004**

#### **AUDIOCONFERENCE CALLER INSTRUCTIONS**

##### **Reminders:**

1. The Distance Learning module runs from 10:00-12:00 (Central Mountain Time). Please adjust for your time zone.
2. Before you call, please turn off call waiting, and eliminate environmental noise in your local office space to assure better phone reception for all. Also, have your participant manual and note sheets ready.
3. When you make comments or ask questions during the workshop, please identify yourself and your State before you speak.
4. Please fill out the curriculum evaluation at the end of the training session and send it to REFT Institute (897 East Panama Drive, Centennial, CO 80121).

##### **Training Module Call-in Steps:**

1. 5-10 minutes prior to 10:00, call 1.888.769.8515. (Passcode: NAPSA; Leader's name: Alex Mitchell). An operator will greet you, place you into the audioconference, and introduce you.
2. Halfway through, the trainer will announce a 10-minute break wherein you will disconnect, then call back (to the same number) after about 8 minutes. The operator will again facilitate your entry.
3. At 12:00, all workshop participants will disconnect and break for lunch.

##### **Debriefing Call-in Steps:**

1. At 1:05, please call 1.888.989.4980 to participate in the debriefing about the Distance Learning Module and the experience of audioconferencing. Your passcode is: NAPSA. Leader's name is: Wendy DuBow.
2. This segment is a continuation of the previous module. An operator will greet you.
3. At 2:00, you will disconnect for a short break.

##### **Prioritizing State Needs Call-in Steps: (OPTIONAL)**

1. Between 2:05 and 2:10, please call back to 1.888.989.4980 to participate in the prioritization of State training needs. (Passcode: NAPSA; Leader's name: Wendy DuBow).
2. At 3:15, everyone will disconnect.

##### **Troubleshooting:**

- ◆ To mute and "unmute" your phone, press \*6.
- ◆ If you are having trouble hearing, or some other issue, press \*0.
- ◆ If you are disconnected, simply call the number again, and the operator will reinsert you into the conference.
- ◆ To disconnect call-waiting, consult your local phone service provider.

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## APPENDIX

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### KEY QUESTIONS: EVALUATING THE SITUATION

- ◆ Is it feasible for all trainees to travel to one site (e.g., are time and money available)?
- ◆ Even though some trainees may be able to travel, are there others who would participate if they could do so from other locations?
- ◆ How many people need to be trained?
- ◆ How many sites are involved (i.e., how many cities, offices, individuals would be involved in distance training)?
- ◆ What funds are available for developing and conducting the training?
- ◆ Is there a need for consistent information — e.g., all trainees get the same information, at the same time?
- ◆ What is the duration of training (e.g., number of hours, days)?
- ◆ Does the difficulty of the training content (and other factors such as the need for practice) suggest that training be provided in several short sessions, rather than one- or two-day long seminars?
- ◆ Are demonstrations an integral part of the training (e.g., giving an injection)?
- ◆ Does training require special equipment or facilities (e.g., computer or internet access, laboratory)?
- ◆ Is observation of performance required for evaluation (e.g., counseling skills, administering CPR)?
- ◆ How does the necessity of meeting requirements for licensing or certification of trainees impact media selection (e.g., requirements for continuing medical education credits, accreditation in a particular field of expertise, certification as a computer software technician)?
- ◆ Does the media selected need to...
  - Provide “real-time” interaction between trainers and trainees (e.g., question/answer sessions)?
  - Provide “real-time” interaction with other trainees (e.g., discussion, collaborative teamwork)?
  - Provide "real time" feedback to trainees?
  - Enable self-paced learning?
  - Adapt to individual trainees' needs and/or learning styles?
  - Fit trainees' varying schedules? (Would it be more appropriate for trainees to access training to fit their own schedules (i.e., 24/7), rather than at one specific time?)
  - Provide “just in time” training – available when the need arises or quickly arranged?
  - Support inclusion of high-quality graphics or video?
  - Work in “low tech” and/or low budget offices?

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## APPENDIX

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### **KEY QUESTIONS: EVALUATING THE SITUATION (cont.)**

- Serve as a reference tool for later use (e.g., audio- or videotaped; saved and printed)?
- What technology is readily available to both trainer and trainees?
  - \_\_\_ Telephone
  - \_\_\_ Specialized telephone conferencing equipment
  - \_\_\_ Computer
  - \_\_\_ Internet access
  - \_\_\_ Email
  - \_\_\_ Computer conferencing software
  - \_\_\_ Videoconferencing equipment (downlink)
  - \_\_\_ Videoconferencing equipment (desktop/laptop)
  - \_\_\_ Videoconferencing equipment (group conferencing equipment)

## APPENDIX

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### TELECONFERENCING PLANNING AND IMPLEMENTATION

#### **TOPIC: Audioconference – planning**

1. Compare conferencing services including levels of service provided, optional features, and costs. Find out how technical problems (e.g., noise on the line, a participant being disconnected) are handled with each provider at each level of service.
2. Make reservation with the service provider via phone or Internet. Participants are either allocated a dial-in conference number and password, or they are 'dialed-out' by the conference host or an operator on the service provider's side.
3. Verify logistical details with service provider (e.g., dial-in number, how to reach technical support, protocol for asking/answering questions or participating in discussion). Send information to participants along with conferencing guidelines and list of all trainees or trainee sites with contact information.
4. Distribute all supplemental training materials to trainees in advance (e.g., printed materials, overhead transparencies, audio or videotapes, demonstration equipment).

Establish a backup plan (e.g., if audio not working, call remote sites and suggest that they work on an exercise in small groups until the system is online again).

#### **TOPIC: Audioconference – Implementation**

1. Start on time. Conduct a roll call. For large groups, roll call can be conducted by the conference operator as trainees or sites call in. For smaller groups, roll call can be conducted by the facilitator or instructor.
2. Introduce trainer. allow time for structured participant introductions.
3. Review the agenda and learning objectives. Provide brief overview of training materials. Review teleconferencing tips and ground rules, including effective use of conferencing equipment and how to deal with technical problems.
4. Address individuals by name; direct questions to specific individuals or sites.
5. Encourage participation and stimulate discussion. Use a variety of learning strategies, including short didactic segments interspersed with activities and exercises.
6. Ask trainees to evaluate training content and delivery process. End on time.
7. Can provide audiotapes of training session (optional).

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## APPENDIX

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### **TELECONFERENCING PLANNING AND IMPLEMENTATION (cont.)**

#### **TOPIC: ONE-WAY Videoconference – planning**

1. Arrange for use of production facilities, uplink, and satellite time.
2. Reserve space at downlink facilities.
3. Assure that a trained site coordinator or technician is available at each site.
4. Verify logistical details with service providers (e.g., dial-in number, information regarding how to link into videoconference, how to reach technical support, protocol for asking/answering questions or participating in discussion).
5. Send participants logistical information, guidelines for participation and training materials:
  - Locations of downlink facilities.
  - Date of videoconference, plus start/end time in each U.S. time zone.
  - Guidelines and technical information, including protocol for question/answer or discussion sessions. Explain to trainees that there will be a delay between asking their questions and having them discussed on the air.
  - Distribute all supplemental training materials to trainees in advance (e.g., printed materials, overhead transparencies, audio or videotapes, demonstration equipment).
6. Establish a backup plan (e.g., if no reception, sites can work on exercises in small groups until technical difficulties solved).

#### **TOPIC: ONE-WAY Videoconference – Implementation**

1. Start on time.
2. Introduce trainer.
3. Review the agenda and learning objectives. Provide brief overview of training materials. Review teleconferencing tips and ground rules, including effective use of conferencing equipment and how to deal with technical problems.
4. Repeat the dial-in telephone number, remind trainees to speak naturally and identify themselves when speaking.
5. Address individuals by name and/or site when responding to their questions. Refer to “we” and “our” rather than differentiating a remote site as “you” or “their.”
6. Make frequent eye contact with the camera. Maintain a relaxed body posture.
7. Use a variety of learning strategies, including short didactic segments interspersed with activities and exercises. Encourage participation and discussion at individual sites.
8. If technical problems occur, keep calm and provide directive information. If audio is not working, call remote sites and ask them to work on something in small groups until the system is online again.
9. Ask trainees to evaluate training content and delivery process. End on time.
10. Provide videotapes or transcripts of training session, if applicable.

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## APPENDIX

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### **TELECONFERENCING PLANNING AND IMPLEMENTATION (cont.)**

#### **TOPIC: TWO-WAY Videoconference – planning**

1. Assure that training room space and videoconferencing equipment is available for trainer and each site.
2. Contact service provider (e.g., Sprint, MCI WorldCom) to reserve conference time, if applicable. Provide date, time, and length of videoconference (or videoconferences, if ongoing course), number of sites, billing information, contact names/telephone numbers for all sites, any special services needed (e.g., taping, Dial-in Toll Free).
3. Ensure that technical support is available for all sites, including those trainees participating via desktop computer.
4. Verify logistical details with service provider.
5. Send participants logistical information and guidelines for participation, including:
  - Date of videoconference, plus start/end time in each U.S. time zone.
  - Technical information:
    - Name of service provider (e.g., Sprint, MCI WorldCom).
    - Instructions for linking into conferencing.
    - Instructions for reaching technical support.
    - List of all trainees or trainee sites, along with contact information.
    - Teleconferencing tips and ground rules (including protocol for asking/answering questions, participating in discussion).
    - Suggest that one person be put in charge of running the equipment (e.g., moving the camera, checking audio levels).
    - Establish a backup plan (e.g., if audio not working, call remote sites and suggest that they work on an exercise in small groups until the system is online again).
6. Distribute all supplemental training materials to trainees in advance (e.g., printed materials, overhead transparencies, audio or videotapes, demonstration equipment)

#### **TOPIC: TWO-WAY Videoconference – implementation**

1. Start on time. Conduct a roll call with camera focusing on each individual or site.
2. Introduce trainer.
3. Review the agenda and learning objectives. Provide brief overview of training materials. Review teleconferencing tips and ground rules, including effective use of conferencing equipment and how to deal with technical problems. *Be specific, including comments such as, "The switch for the camera is on the lower right side."* Allow a few minutes for users to experiment with the equipment.
4. Address individuals by name and/or site when talking to them or responding to their questions. Refer to "we" and "our" rather than differentiating a remote site as "you" or "their."

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## APPENDIX

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### TELECONFERENCING PLANNING AND IMPLEMENTATION (cont.)

5. Make frequent eye contact with the camera.
6. Interaction is the key to successful interactive videoconferencing. Encourage participation and stimulate discussion at individual sites. Use a variety of learning strategies, including short didactic segments interspersed with activities and exercises.
7. If technical problems occur, keep calm and provide directive information. If audio is not working, call remote sites and ask them to work on something in small groups until the system is online again.
8. Ask trainees to evaluate training content and delivery process.
9. End on time.
10. Provide videotapes or transcripts of training session, if applicable.

#### **TOPIC: Web conference – planning**

1. Assure equipment and any necessary software available at each site.
2. Reserve conference time with audio and/or video service providers (*as applicable*).
3. Assure computer literate person available each site.
4. Verify logistical details with service provider and send information to participants along with guidelines for participation (including protocol for asking/answering questions and participating in discussion).

#### **TOPIC: Web conference – implementation**

1. Start on time.
2. If group is small (e.g., 5 sites or fewer), conduct a roll call with camera focusing on each individual or site.
3. Introduce trainer.
4. Review the agenda and learning objectives. Provide brief overview of training materials. Review conferencing tips and ground rules, including effective use of conferencing equipment and how to deal with technical problems. *Be specific, including comments such as, "The switch for the camera is on the lower right side."* Allow a few minutes for users to experiment with the equipment.
5. Address individuals by name and/or site when talking to them or responding to their questions.
6. Make frequent eye contact with the camera.
7. Interaction is the key to successful conferencing. Encourage participation and stimulate discussion at individual sites. Use a variety of learning strategies.
8. If technical problems occur, keep calm and provide directive information.
9. Ask trainees to evaluate training content and delivery process.
10. End on time.
11. Provide audio/videotapes or transcripts of training session, if applicable.

### SITE COORDINATOR'S ROLE IN VIDEOCONFERENCING

If funding and staffing allow, each remote site should have a site coordinator available to help the workshop run smoothly, especially for videoconferencing sessions. The site coordinator's role can include:

- ◆ Providing information to trainees ahead of time, including directions to the site and what to expect upon arrival (e.g., parking, location of entrance, location of training room)
- ◆ Ensuring a comfortable physical environment
- ◆ Providing psychological support
- ◆ Facilitating camaraderie and mutual support among trainees
- ◆ Facilitating exercises and activities, including leading group discussions
- ◆ Acting as a "quality pulse" – providing a link between trainees, the trainer, and administrators of the training program

Remember that the site coordinator is the first person a trainee sees. The quality of the training will first be measured by the quality of that first contact. So, in selecting an effective site coordinator, key characteristics would include warmth and caring, efficiency, effective organizational skills, and patience. It also is important to encourage creativity and flexibility.

Support for the site coordinator should include:

- ◆ A clear explanation of role and responsibilities
- ◆ Basic background information or training regarding the content material
- ◆ Sufficient training to provide technical expertise (if required to perform that function)
- ◆ A site coordinator's reference manual, which could include the following information:
  - Guidelines for preparation and distribution of training materials
  - Instructions for exercises and activities
  - Guidelines for conducting the training evaluation
  - Checklist of responsibilities and tasks
  - Description of how to set up and use technical equipment
  - Contact information for obtaining technical support
  - Trouble-shooting guide

Backup information describing what to do if the technology doesn't work

### TIPS FOR SUCCESS IN DISTANCE TRAINING

#### You can encourage learning by...

- ◆ Developing assignments and exercises that are highly structured and clearly defined and have a short time frame. It's also helpful, especially in a videoconference, to provide an on-screen re-statement of the instructions, along with an indication of how much time is left for the exercise. In an audioconference, the instructions can be included in the Participant Guide.
- ◆ Keeping trainees actively engaged is one of the greatest challenges of distance training. In part, this challenge will be met through the use of multiple, interactive, instructional strategies. Additionally, holding trainees' attention will be significantly affected by the quality and clarity of training materials.
  - Evoking images, and encouraging understanding and retention, through the use of sound and music.
  - Illustrating concepts with visual analogies (such as word pictures), which help trainees visualize comparisons and relationships. An analogy describes something unfamiliar by comparing it to something familiar, such as, "The body is like a machine..."
  - Directing trainees' attention to specific points in the training materials (i.e., "The third graph on page 6 shows...") and stating that particular points are especially important so as to focus attention.

#### Structure and organization are keys to success in distance training

- ◆ In distance training, it is especially important that activities be well planned before the course or session begins.
- ◆ Learning is facilitated when trainees are given a clearly defined outline of topics and clear, specific instructions for activities.

Remember, it will not be as easy to recognize signs of confusion in distance learners. Developers and trainers should try to anticipate questions regarding exercises and activities in advance and answer them in a Participant Guide.

*(see resources next page for further information)*

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## APPENDIX

### RESEARCH IN DISTANCE EDUCATION

#### A Study on Guidelines for Good Practice

Excerpt from a report by the *American Federation of Teachers Higher Education Department* – March 2000—Survey results: 200 returns, 200 survey results completed. [http://www.aft.org/higher\\_ed/downloadable/distance.pdf](http://www.aft.org/higher_ed/downloadable/distance.pdf)

The practitioners responding to our survey overwhelmingly indicated that we should move forward with distance education: 169 (of the 200 respondents) said they would teach by distance education again, while only 31 said they would not. These respondents reported that students who successfully completed their distance education courses performed the same (109) or better (55) than students in comparable courses that they taught in the traditional classroom did. Reviewing the responses, it is also clear that faculty members teaching distance education courses are serious, gifted instructors utilizing every means they can to serve their students. Most practitioners believe they are successful in their distance education classes when they are given the proper time, tools and training, and when they have mature, highly motivated students with appropriate equipment and training.

#### ADDITIONAL INFORMATION – EFFECTIVENESS AND INTERACTIVITY

**Effectiveness:** Not only is distance learning convenient, it is also effective. Several research studies have found that distance learning is equally or more effective than traditional instruction when the method and technologies used are appropriate to the instructional tasks, when there is student-to-student interaction, and when there is timely teacher-to-student feedback (Moore & Thompson, 1990; Verduin & Clark, 1991). In a study conducted at California State University, students who participated in a Web-based course, achieved significantly higher test scores (Schutte, J. G., 1996).

**Interactivity:** Contrary to popular opinion, distance learning courses can offer increased interactions with students. In particular, introverted students who are too shy to ask questions in class will often "open up" when provided the opportunity to interact via email or other individualized means (Franklin, Yoakam, & Warren, 1996). Through the increased interactions, teachers can better meet individual student's needs.

*A Teacher's Guide to Distance Learning*, published by the Florida Center for Instructional Technology, College of Education, University of South Florida (1998, 1999)

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## APPENDIX

### **RESEARCH IN DISTANCE EDUCATION (cont.)**

Excerpt from *Distance Education at a Glance* – Engineering Outreach at the University of Idaho --<http://www.uidaho.edu/eo/distgla.html>

*Guide #9 of a 12-part series – This guide is one in a series developed by [Barry Willis](#) and the University of Idaho Engineering Outreach staff highlighting information detailed in Dr. Willis' books, *Distance Education - Strategies and Tools* and *Distance Education - A Practical Guide*.*

#### **Distance vs. Traditional Education**

Research indicates that the instructional format itself (e.g., interactive video vs. videotape vs. "live" instructor) has little effect on student achievement as long as the delivery technology is appropriate to the content being offered and all participants have access to the same technology. Other conclusions drawn from this line of research suggest:

- Achievement on various tests administered by course instructors tends to be higher for distant as opposed to traditional students (Souder, 1993), yet no significant difference in positive attitudes toward course material is apparent between distant and traditional students (Martin & Rainey, 1993).
- Conventional instruction is perceived to be better organized and more clearly presented than distance education (Egan, et al., 1991).
- The organization and reflection needed to effectively teach at a distance often improves an instructor's traditional teaching.

#### **Why is Instruction Successful?**

Good distance teaching practices are fundamentally identical to good traditional teaching practices and "those factors which influence good instruction may be generally universal across different environments and populations." (Wilkes & Burnham, 1991). Because distance education and its technologies require extensive planning and preparation, distance educators must consider the following in order to improve their effectiveness (Schlosser & Anderson, 1994):

- Extensive pre-planning and [ongoing] evaluation is necessary. Teachers cannot "wing it". Distance learners value instructors who are well prepared and organized (Egan, et al., 1991).
- Learners benefit significantly from a well-designed syllabus and presentation outlines (Egan, et al., 1991). Structured note taking, using tools such as interactive study guides, and the use of visuals and graphics as part of the syllabus and presentation outlines contribute to student understanding of the course. However, these visuals must be tailored to the characteristics of the medium and to the characteristics of the students.

Teachers must be properly trained both in the use of equipment and in those techniques proven effective in the distance education environment. Learners get more from the courses when the instructor seems comfortable with the technology, maintains eye contact with the camera, repeats questions, and possesses a sense of humor (Egan, et al., 1991)

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## APPENDIX

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### How Important is Interaction?

Many distant learners require support and guidance to make the most of their distance learning experiences (Threlkeld & Brzoska, 1994). This support typically takes the form of some combination of student-instructor and student-student interaction.

Research findings on the need for interaction have produced some important guidelines for instructors organizing courses for distant students:

- Learners value timely feedback regarding course assignments, exams, and projects (Egan, et al., 1991).
- Learners benefit significantly from their involvement in small learning groups. These groups provide support and encouragement along with extra feedback on course assignments. Most importantly, the groups foster the feeling that if help is needed it is readily available.
- Learners are more motivated if they are in frequent contact with the instructor. More structured contact might be utilized as a motivational tool (Coldeway, et al., 1980).
- Utilization of on-site facilitators who develop a personal rapport with students and who are familiar with equipment and other course materials increases student satisfaction with courses (Burge & Howard, 1990).
- The use of technologies such as fax machines, computers, and telephones can also provide learner support and interaction opportunities.

### Cost vs. Benefits

When establishing a distance education program, one of the first things considered is the cost of the system. Several cost components factor into the design of a distance education system (Threlkeld & Brzoska, 1994):

- **Technology** - hardware (e.g., videotape players, cameras) and software (e.g., computer programs).
- **Transmission** - the on-going expense of leasing transmission access (e.g., T-1, satellite, microwave).
- **Maintenance** - repairing and updating equipment.
- **Infrastructure** - the foundational network and telecommunications infrastructure located at the originating and receiving sites.
- **Production** - technological and personnel support required to develop and adapt teaching materials.
- **Support** - miscellaneous expenses needed to ensure the system works successfully including administrative costs, registration, advising/counseling, local support costs, facilities, and overhead costs.
- **Personnel** - to staff all functions previously described.

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## APPENDIX

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Although the costs of offering distance education courses may be high, there are high costs associated with offering conventional courses. Benefits of distance education courses to the learner include (Ludlow, 1994):

- Accessible training to students in rural areas.
- Students may complete their course of study without suffering the loss of salary due to relocation.
- Students are exposed to the expertise of the most qualified faculty.

Perhaps the question institutions must answer is whether it is part of their mission as educators to offer programs to those who might not be reached without distance education. The primary benefit to educational institutions through distance education may be the increased number of non-traditional students they are able to attract and serve. Research also suggests that as programs become more efficient, program costs should decrease (Ludlow, 1994).

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## APPENDIX

### RESOURCES

A multitude of resources exists for trainers and administrators getting started in distance training. A web search can provide a wealth of information, including publications, listserv discussion groups, organizations, educational opportunities, and computer hardware and software.

#### Distance Learning

<http://www.uwex.edu/disted/home.html> -- Distance Education Clearinghouse: University of Wisconsin-Extension

<http://www.uwex.edu/disted/evaluation.html> -- Distance Education Clearinghouse – Evaluation and Assessment

<http://www.uidaho.edu/eo/distgla.html> -- Distance Education at a Glance: Engineering Outreach at the University of Idaho

<http://www.thinkofit.com/webconf/> -- Conferencing on the Web:  
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[http://www.outreach.psu.edu/DE/IDE/guiding\\_principles/](http://www.outreach.psu.edu/DE/IDE/guiding_principles/) -- Innovations in Distance Education (IDE): Penn State University

<http://fcit.coedu.usf.edu/distance/default.htm> -- *A Teacher's Guide to Distance Learning*, published by the Florida Center for Instructional Technology, College of Education, University of South Florida (1998, 1999)

<http://seamonkey.ed.asu.edu/~mcisaac/disted/final98/finallj.html> -- Adult Learning Theory: Implications for Distance Education

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