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United States  
3 November 2000[BACK TO THE FEATURE INDEX](#)

Emerging technologies will make possible the seamless integration of voice, video, and data connections among online class participants. In particular, video teleconferencing and desktop video conferencing will enable all types of education and communications to be delivered in more individualized "learner centric" environments. Not only will students be able to see and hear each other, they will be able to simultaneously collaborate on the same software application.

However, it is important that educators see teleconferencing as more than just a way to extend classes to off-campus locations. Special emphasis should be given to ways to gain attention, maintain attention, encourage participation, and structure the learning context for remote learners. The purpose of this article is to identify guidelines to help construct the right learning environments and to recommend techniques which maximize student learning.

**The Learning Environment: Group Video Conferencing**

When it is not possible to create rooms specifically for video conferencing, steps can be taken to create the best learning environment possible. Follow these guidelines when setting up a remote video conferencing site for the learners:

- Choose a room far from distracting office noises. Most video conferencing systems screen out nonhuman noise, but even so, participants might still be unnecessarily distracted.
- A windowless room is best. Light can cause problems with the video camera. If that is not possible, use drapes instead of blinds to cover the windows. (Blinds tend to cause uneven lighting that can result in incorrect camera focus.)
- Make sure the video conferencing unit is directly in front of you, no more than 6 to 8 feet away. You will then have a good view of the remote locations whether you choose to stand or sit.
- Limit class sizes to 10 to 24 students, but make sure there is enough room for extra tables for both group and individual activities.
- Walls should be a neutral color with matte or nonreflective surfaces to prevent glare and enable the participants to be seen better remotely.
- Avoid placing items behind you: You don't want that fern to look like it's growing out of your head!

**The Learning Environment: Desktop Video Conferencing**

With desktop video conferencing, your desktop computer and your participants' desktop computers become learning tools. Most often, a technology support organization will add the hardware and software for desktop video conferencing to your existing PCs. As with group video conferencing, there are a few specific guidelines that can enhance the effectiveness of the technology in your workspace:

- Provide enough room around your computer and display.
- Avoid strong back lighting such as facing the camera toward a window or other strong light source. If possible, use only cool white fluorescent or white incandescent lights. Clear incandescent or older fluorescent lights

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tend to cause yellowish video images.

- The number of participants sharing a desktop video PC should be no more than two or three at each location; any more and it will be too hard for individuals to see, or be seen, on the computer monitor.
- Attaching a large monitor to the computers can be useful but, generally, this reduces the quality of the live video image.

### You Are What You Wear

Creating the right room and following specific protocol will help establish a comfortable and effective environment for two-way video conferencing. However, how you "look" will also effect the learning environment. Here are a few more helpful suggestions:

- Do not wear extremely bright items. Wear soft-color solids, earth tones, and subdued colors. Busy patterns can be distracting, and they may not transmit well in compressed digital systems. Anything with fine detail will also tend to blur.
- Bright jewelry may reflect too much light or cause microphone noise.
- Maintain eye contact with the camera rather than the video monitor. The participants will think you are looking directly at them.

### Educational Techniques

While excellent face-to-face presentation techniques are necessary for video conferencing, presenters must go beyond these skills to be truly successful. The additional skills you need can be summarized in two main areas: Audience Attention and Learning Strategies.

Getting the participants' attention and keeping it is critical to any learning program, and when the instructor is located remotely, it is vital. Understanding how students learn via the Internet and online technologies is key. Use these steps to gain and maintain attention, and to develop effective learning strategies:

#### Gaining and Maintaining Attention

Two-way video is a highly "visual" medium, so change the environment regularly; don't let the camera focus on one thing for a long time. Include stimuli--such as computer graphics--that are associated with key learning points of your program. Use voice cues or key sounds to get participants ready for class.

Now that you've got their attention, you have to make sure your students and participants stay focused and interested in your lesson. Learn to vary the pitch, tone, and volume of your voice to maintain attention and motivate participants. Also vary the message frequently and support complex ideas and concepts with stimuli, such as visuals, videotapes, and questions.

Print materials are also a good way to maintain attention and you should provide hardcopies of your lesson plan--with important points in bold or in italics.

#### Learning Strategies

No matter how well you dress or organize your room, if you don't understand how students learn, your teaching will be inefficient and not effective. To enable learning, participants must feel comfortable interacting with the facilitator and other remote learners. They must also be able to understand the context and organization of the program. When determining the learning strategy, consider four main areas: relevant content, participation, content organizers, and format structure.

#### 1. Relevant Content

A two-way video conference is not the medium to present "nice to know" information. Present only "need to know" concepts, ideas, and skills and present it in ways that enable the learners to tie it to previous experience, current interest, and the "real world".

#### 2. Participation

Encourage participants to take an active role in their learning. Plan activities that involve learners at the same location and that also involves interaction between participants at all locations. Use questions, brainstorming activities, or collective problem solving to enhance participation.

#### 3. Content Organizers

Generally, organizing content into specific categories will help participants learn the material better. Consider dividing complex ideas into simpler chunks. Make sure you check for understanding at frequent intervals before moving on to the next "chunk." Allow complex content and ideas to build upon earlier learning.

#### 4. Format Structure

Once you have determined relevant content, tools for participation, and content organizers, structure the program in the "preview-present-review" format.

- **Preview the material.** Make participants aware of the specific content to be covered. No matter how you do this, the importance of any preview tool is to provide an advanced framework as well as set forth important concepts that will be presented.
- **Present the content.** Use the content organizers and participation activities in connection with visual and audio media to provide content.
- **Review all relevant content.** Again, this can be done using content organizers and interactive activities ranging from simple questions and answers to solving case studies.

These are just a few suggestions and ideas to help make distance education and learning a fulfilling experience. The physical learning environment and the educational techniques employed by the instructor are both critically important in the planning of distance learning programs. But having the right teleconferencing technology in place is only half the story: Skillful presentations that are well organized, appropriate to the learning context, and very interactive are essential if learners--and instructors--are to achieve their goals.

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