

Working With Compressed Video

Work with compressed video carries two sets of constraints. First, there are technological limitations that must be accommodated. Second, there are human factors that usually occur with students having their first Compressed Video experience:

Technological Constraints

A camera and microphone take in a larger amount of information than can be transmitted by the lines used to connect two sites for videoconferencing. It is for this reason that a CODEC is placed at each end: it's job is to compress that information into a smaller form that can then be shipped via ISDN lines. This is a great deal of processing, and results in the following effects:

- **Video “ghosting” or “image softness”:** The CODEC must compensate for the rapid flow of information in a couple of ways. One is to reduce the number of video frames per second; while 24 fps will result in smooth motion, the CODEC may be only to process half that number. This results in “jerky” motion. Also, the compression process may make the image fuzzy or chunky. Reducing the amount of information that flows into the system may lessen these effects. In other words, the less the picture changes, the less new information there is to be processed by the CODEC. Reducing motion and wearing plain clothing are two ways to lower the amount of information flow.
- **Audio delays:** Sound can be delayed between .5 and 2 seconds due to the compression process and the time needed to travel over the connecting lines. This delay requires novices to learn to clearly indicate the end of statements and to use visual cues such as nodding rather than verbal affirmations like “uh huh.”
- **Audio “clipping” or echo:** Resetting the echo canceller on the system and reducing background noise can correct this problem. Microphone volume and placement may also be a problem.

Working With Human Factors

Because of its closeness to broadcast television, users often need to readjust behavior and expectations when using videoconferencing. Try to keep the following human factors in mind as you explore telelearning via two-way video.

- **Videoconferencing etiquette:** Users must learn not to treat an onscreen speaker like broadcast television images. There is a natural tendency to break into conversation

with a peer while someone is speaking on the remote television screen. Because most users are not accustomed to conversing with a television image, they must be reminded that this medium “puts” a distance person in the same room with them.

- **Two-way videoconferencing is unlike one-way television:** There is a learned “vocabulary” of television viewing that includes an expectation to be entertained by the screen. While it is ideal for the onscreen teacher to create good materials and understand how to use the various presentation tools, the preconceptions of the students must be challenged with new expectations for using videoconferencing.

Getting Comfortable with Videoconferencing Equipment

Components of the system:

- Switch Box
- Front Camera
- Rear camera, with remote control
- Microphones
- ELMO (Document Camera)
- Video Tape
- Computer

Communication Skills

- Learn the videoconferencing system
- Maintain eye contact
- Show interest in all participants
- Dress appropriately
- Move and gesture slowly and smoothly
- Maintain appropriate on-camera positioning
- Maintain enthusiasm towards the technology and the subject matter
- Speak in a strong, clear voice
- Use audio-visual aids

Instructional Strategies

- Focus on Learning
- Set Expectations
- Provide Supporting Materials
- Engage Students with Variety and Interaction
- Reduce Distractions During Learning Activities
- Encourage Dialog