
INSTRUCTIONAL DESIGN FOR STREAMING MEDIA

DESIGNING RICH MEDIA FOR THE WEB

When designing rich media for the web we need to think about using media differently than in the classroom. Web-based course material, streaming audio and video can be more than just an optional supplement or an aid to learning. Successful course designers use streaming media, not as a supplement or enhancement to a course, but as an integral part of the curriculum.

The following principles apply to all forms of rich media:

- **Learners expect to interact:** The web is a highly interactive user-driven medium where people are accustomed to scrolling, clicking and searching for information. Most learners expect to interact with content on the web.
- **Keep media clips short and to the point:** Don't expect students to passively watch a continuous 45 to 60 minute streaming lecture. Try to keep audio and video clips to less than 10 minutes. Be to the point and focused. Usability studies show that people tend not to watch or listen to video or audio clips on the web as they do on television. Other items on the page can be distracting, causing lengthy media to be turned off or forgotten after a few minutes.
- **Media clips should add value:** Don't use media just to give students a break from reading or for short commentaries where a text version would be just as effective. Users expect to interact with elements on the web. Streaming of long lectures can lead to users jumping ahead, or minimizing the media while continuing to "surf", causing a distraction from learning. Streaming lectures is not considered to be a good pedagogical strategy
- **Organize media into topics or sequences:** One principle of writing for the web that also applies to designing streaming presentations is to chunk content material into well-organized small sections. Edit long audio and video segments into small topics. Label each segment and create a topic menu of media clips. Provide a brief one or two sentence description beneath each topic tile. This design not only provides an advanced organizer making the structure and sequence of the media content more explicit, but it also enables learners to locate specific material for review at a later time. If you're recording live lectures that you want to stream later, be sure to organize your material so that it can be easily chunked and edited into a structured menu format.
- **Integrate activities with media:** Adding streaming media material does not make a web site more interactive. In fact it can do just the opposite. Viewing audio and video material on the web can actually promote passive learning. To keep students cognitively engaged in the content material, don't place links to audio or video clips on web pages without first having an explicit pedagogical strategy and rationale.
- **Prepare learners to view media:** Always prime and prepare learners for viewing a media clip by introducing it. In textual form, briefly explain its purpose and what learners should do with it, what they should be watching or listening for and then have them view the clip.
- **Consider accessibility:** Although the use of rich media can address multiple learning styles, users must be able to use the media. If files sizes are too big, or the formats are not common students will become frustrated trying to use the material. Also, students with hearing or visual disabilities may not be able to interact with the media. Transcripts of audio and video media should always be made available.

USING STREAMING AUDIO

Audio content can be used when no visual elements are needed.

- **Convey a specific mood or tone:** Use streaming audio intentionally to convey a specific mood or dramatic tone to a speaker's commentary.
- **Stories and interviews:** Streaming audio might include story telling or excerpts from plays, poems or from interviews where nuances in vocal tone convey an important message.
- **Language skills and communication arts:** Certain content related to language learning, communication arts and music often benefit from audio streaming.
- **Put a face to the voice:** When streaming a speaker's voice, put a face to the voice. Listeners will subconsciously construct a mental image of the speaker anyway, so why not show their picture?

USING ILLUSTRATED AUDIO

If motion is not a critical element of your instructional message, illustrated audio can be a substitute for full motion video, combining spoken words with static visual representations.

- **Accentuate the verbal message:** Research shows that the real value of multimedia presentations occurs when the visual channel conveys pictorial information such as diagrams, pictures, or illustrations while the audio channel provides spoken words that add conceptual shape and work in tandem with the pictures. This is called dual channel processing. Multiple sensory inputs help learners construct mental connections between the visual portion of the brain and the linguistic or verbal part of the brain.
- **Add synchronized narration:** If audio doesn't fit with images viewers can become confused and lose focus on the instruction.
- **Limit screen text:** Too much on-screen text during an animation can create a heavy cognitive load on the visual sensory channel.

USING STREAMING VIDEO

Video is time consuming to produce and requires production skills to do it well. So make sure you have a strong pedagogical rationale for using video in the first place.

- Keep videos short typically no more than 10 minutes.
- Provide realistic representations.
- Capture natural processes in the physical world for analysis.
- Show demonstrations of psychomotor skills, or interpersonal interactions.
- Avoid 'Talking Head' videos.

USING STREAMING ANIMATIONS

Streaming animations are similar to video, but contain less detail. Animations are often carbon-like in design and are good for distilling a subject to its essentials by eliminating unnecessary details.

- **Eliminate unnecessary details:** Allow learners to focus their visual attention on the animated elements while using their auditory channel to receive the words.
- **Show how something works:** Explaining how something works can be more effective when combined with a synchronized audio commentary.

SUMMARY

Effective use of streaming media for learning depends on thoughtful instructional design. As a general rule use streaming minimally but when you do, do so with a clear pedagogical purpose and rationale. In designing your lessons, make sure students use your streaming content in an active way that is clearly connected to performance, tasks and assignments. Make your media clips short and design a menu structure that makes it easy for students to access the content they need easily. And carefully select a type of streaming media – audio, video or illustrated audio – that best serves to achieve your instructional objectives given your time and budget.

- Clear pedagogical purpose.
- Incorporate active learning strategies.
- Keep media clips short.
- Carefully select media type.