

# BUYER'S **guide**

Imagine how excited your students would be to come to class if they knew they'd be spending the period collaborating with a group of their peers from France, attending a festival in Brazil, or touring the Smithsonian. While budget cuts have made even nearby field trips a thing of the past in many districts, interactive videoconferencing (IVC) systems can provide students with new experiences and take them to places they would otherwise never be able to go. Schools can also use IVC systems to connect students with subject-area experts from around the world, record and transmit distance-learning courses, and provide teachers with professional development and conference experiences sans travel expenses.

IVC's primary use is to transmit audio and video signals between two or more sites in real time. The technology runs the gamut from state-of-the-art "telepresence" systems that can connect up to 10 sites with multiple widescreen displays, several high-definition (HD) cameras that track speakers through pressure mats on the floor, and a touch-screen remote control—a setup that can run anywhere from \$25,000 to \$350,000—to a simple set-top standard-definition

(SD) camera with a single microphone and a codec (a signal decoder that converts analog signals to digital and vice versa).

Here we focus on room-sized base systems priced \$9,000–\$18,000 that include a codec, camera, microphone(s), and wireless remote. You will also need at least one TV, monitor, or interactive whiteboard to use as a display. For the K–12 setting, other useful add-ons include a document camera to scan and transmit slides or printed documents, a projector, and a DVD player, all of which can be plugged into the systems you see here to share documents or video clips with other collaborators alongside the audiovisual from the main camera. If it's in the budget, you may want to add individual student cameras for a more student-centered experience. You can permanently mount these systems in a designated classroom or attach them to a mobile cart to move from one classroom to another or from school to school within a district.

For more information about setting up and using IVC systems in the classroom, check out ISTE's newly released book, *Videoconferencing for K–12 Classrooms (Second Edition)* by Camille Cole, Kecia Ray, and Jan Zanetis ([www.iste.org/vidco2](http://www.iste.org/vidco2)).

## Interactive Videoconferencing Systems

Company	Model
 <p>LifeSize   <a href="http://www.lifesize.com">www.lifesize.com</a></p>	Room 200
	Team 200
 <p>Polycom   <a href="http://www.polycom.com">www.polycom.com</a></p>	HDX 8006
	HDX 7002
 <p>Sony   <a href="http://pro.sony.com">http://pro.sony.com</a></p>	IPELA PCS-XG80
 <p>Tandberg   <a href="http://www.tandberg.com">www.tandberg.com</a></p>	MediaPlace MXP 770
	Edge MXP 95

Price	Components Included	Camera Features	Video Quality	Audio Quality	Connectivity	Extra Features
\$17,000	Codec, camera, phone, wireless remote, power supply, cables	HD, pan, tilt, 4× optical and digital zoom, wide-angle zoom lens w/70-degree field, auto focus, auto gain control, 10 presets	Full HD (1.7+ Mbps), true HD (768 Kbps), 1080 pixels at 30 fps, 720 pixels at 60 fps, progressive scanning	Built-in HD audio, full duplex, echo cancellation, auto gain control, auto noise reduction	Supports up to 6 participant sites, 128 Kbps–6 Mbps point to point, 128 Kbps–2 Mbps multipoint, ISDN or IP	Eligible for E-Rate discounts, participant viewing control, customizable background, context-sensitive user interface
\$11,000	Codec, camera, mic pod, wireless remote, power supply, cables	HD, pan, tilt, 4× optical and digital zoom, wide-angle zoom lens w/70-degree field, auto focus, auto gain control, 10 presets	30 fps, true HD (1280 × 720 pixels at 1+ Mbps), progressive scanning	Built-in HD audio, full duplex, echo cancellation, auto gain control, auto noise reduction	Supports up to 4 participant sites, 128 Kbps–4 Mbps point to point, 128 Kbps–1.5 Mbps multipoint, ISDN or IP	Eligible for E-Rate discounts, participant viewing control, customizable background, context-sensitive user interface
\$18,000	Codec, camera, microphone array, wireless remote, cables	HD; 12× optical zoom; full-motion pan, tilt, zoom; 99 presets	HD up to 1080 pixels at 30 fps from 1.5 Mbps, 720 pixels at 60 fps from 1.2 Mbps; SD at 30 fps from 256 Kbps	HD voice with stereo surround, 22 kHz, auto gain control, auto noise suppression, echo cancellation, keyboard noise reduction	Supports up to 4 sites, up to 6 Mbps line rate over IP	Dual-stream content sharing, video images can be inserted into projected content, immune to cell phone interference
\$10,000	Codec, camera, two microphones, wireless remote, cables	HD; full-motion pan, tilt, zoom; 12× optical zoom; 99 presets	HD resolution (720 pixels), 30 fps at 832 Kbps–2 Mbps	HD voice with stereo surround, 22 kHz stereo, full duplex, auto gain control, auto echo cancellation, noise reduction	Supports up to 4 participant sites, dual-stream multimedia content sharing	Supports input from 5 video sources (cameras, PC, document camera, DVD player), supports dual monitors, immune to cell phone interference
\$9,000	Codec, camera, omnidirectional microphone, wireless remote, power supply, cables	Backlight compensation, auto white balance, 100-degree pan angle, 125-degree tilt angle, 6 presets, 10× optical and 4× digital zoom, 100 presets	1080i HD (1920 × 1080 pixels), 720 pixels at 60 fps	MPEG-4 Advanced Audio Coding compression, 14 kHz, built-in echo cancellation	Supports up to 6 sites, connections up to 10 Mbps over IP/768 Kbps over ISDN, adaptive rate control, forward error correction, streaming, real-time auto repeat request	Data sharing w/video annotation, memory stick recording, one-touch dialing, supports digital whiteboard, backward compatibility with SD
\$18,000	Codec, camera, built-in projector, built-in DVD/VCR player, mobile cart, cables	Standard definition with pan, tilt, zoom	SD, 1280 × 720 pixels progressive at 30 fps	CD quality, 20 kHz mono/stereo, echo cancellation, auto gain control, auto noise reduction	Supports up to 4 video sites and 1 audio site; connections up to 1152 Kbps over IP and 384 Kbps over ISDN	DuoVideo and data sharing from PC, DVD, document camera, etc.; PC slot for wireless LAN connection
\$11,400	Codec, camera, tabletop microphone, wireless remote, cables	Precision HD, 7× zoom, 20-degree tilt, 95-degree pan, 250-degree total horizontal view	HD, 720 pixels, picture-in-picture, picture-outside-picture, side-by-side, PC zoom, packet loss management	CD quality, 20 kHz mono and stereo, 2 echo cancellers, audio mixer, auto gain control, auto noise reduction	Supports up to 4 video and 3 audio sites, connections up to 512 Kbps on ISDN and 2 Mbps on IP	DuoVideo and dual stream, intelligent call management, supports up to 5 accessories, includes Natural Presenter Package software