Decoding Technology

Multimedia Projectors

by Tim Walker and Chip Donohue

In the last issue (*Exchange*, September/October 2007) we discussed presentation graphics applications. Once you have created a slide show, you're going to want to show it off. Multimedia projectors are the perfect way to share your presentations. They can be used for classroom lessons, staff trainings, or an open house. You'll want to begin by learning the basics for selecting a projector and then move onto best practices for using one. You'll then be ready to walk down the red carpet for the premiere of your multimedia presentation.

Tech Terms

- **LCD Projector:** Liquid crystal display. A multimedia projector that directs a bright light through three small LCD panels (red, green, and blue) containing hundreds of thousands of pixels. The light recombines to create an enlarged image onto a wall or screen.
- **DLP Projector:** Digital light processing. A multimedia projector that reflects a bright light onto a microscopic chip containing millions of tiny mirrors each representing a single pixel. The light passes through a color wheel to create an enlarged image onto a wall or screen. DLP technology was developed by Texas Instruments®.
- **Lumens:** A unit of measurement for light output. The brightness of a multimedia projector is indicated in American National Standards Institute (ANSI) lumens. The higher the ANSI lumens, the clearer an image will be projected in a normally lit room.
- **Pixel:** A PIX (picture) EL (element) is the smallest component of an image or picture on a screen (usually a colored dot). The greater the number of pixels the greater the resolution.
- **Resolution:** A measure of sharpness and clarity in an image. The higher the resolution, the more detail you'll see in a projected image. Resolution is indicated by the number of horizontal pixels times the number of vertical pixels. Multimedia projectors come in two resolutions: Super Video Graphics Array (SVGA) and Extended Graphics Array (XGA).
- **Zoom Lens:** A feature that allows a projected image to be adjusted in size without having to physically move the projector. A multimedia projector can have a manual or automatic zoom lens.
- **Aspect Ratio:** The width-to-height ratio of a projected image measured in inches. The most common aspect ratios for multimedia projectors are 4:3 and 16:9.
- **Document Camera/Visual Presenter:** A digital device that captures still images of documents and graphics. These images are typically displayed using a multimedia projector. Document cameras have replaced traditional overhead projectors.
- **Smart Classroom:** An interactive teaching and learning room equipped with a multimedia projector, sound system, Internet connection, and other audio-visual technologies such as a VCR, DVD player, and document camera.

Tech Tools

Before you begin shopping for a multimedia projector, consider the following issues and how each may impact what's best for your program.

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- Multimedia projectors can be portable or permanently mounted to the ceiling in a room. A light, portable projector can be shared among classrooms and used for off-site presentations. A mounted projector is not as susceptible to loss, theft, or damage from being moved frequently, but may reduce the flexibility you need.
- LCD and DLP projectors are comparable in price so selecting between the two may come down to personal preference. LCD projectors are said to provide better results in more brightly-lit rooms, use less power, and be slightly quieter. DLP projectors have been known to provide smoother video and come in smaller casings. If possible, try testing them alongside one another.
- The brighter the image your projector can create, the less likely you are to have to dim the lights. A 2000 ANSI lumens projector should be bright enough for the typical classroom. However, exposure to a greater amount of direct sunlight may require dimming the light or upgrading to extra lumens.
- In most instances, SVGA resolution (800x600) is probably adequate. SVGA projectors work great for PowerPoint® presentations. XGA resolution (1024x768) is generally more expensive, but may be worth the extra investment if you plan to project in large classrooms or have a need to show detailed images.
- Many multimedia projectors today include a low light setting. This feature allows you to operate the projector at a lower power level in dark rooms to extend the bulb life. A replacement lamp bulb can cost $200 or more.
- Some multimedia projectors include wireless functionality. This eliminates the need to connect your computer directly to the projector using a cable. (You will still need to plug the projector into a power source.) These projectors require your computer to have a wireless card or be Bluetooth® enabled. Ask a sales representative about compatibility. The primary drawback to this technology is you may experience a slight delay in projection.

Tech Tips

There are many ways to put a multimedia projector to use in an early childhood program. Here are a few to consider:

- **Display a PowerPoint® slide show** — Use PowerPoint® presentations for staff training, parent welcome meetings, marketing, and classroom activities.
- **Present photo slide shows —** Show photos of class activities, field trips, documentation, and other program events in the classroom or for parent and family events.
- **Take your show on the road** — Bring your laptop and projector to conferences and off-site meetings.
- **Play videos** — Conduct staff training or parent education sessions to large audiences. A VCR or DVD player can be hooked up directly to a projector for showing videos.
- **Explore the Internet** — Take a class on a virtual field trip around the world, play educational games as a group, or visit other fun places to learn online. You'll need to connect a computer with an Internet connection to your projector.
- **Enhance circle time** — Read books, display children's work, or have children play show-and-tell during circle time using a document camera and projector.

Tech Links

These resources may be helpful when researching different multimedia projectors on the market or searching for ideas on how to use a projector in an early childhood program.

- Bluetooth® Technology
  www.bluetooth.com
- PC Magazine Reviews
  www.pcmag.com/reviews/
- Pre-K Pages: Technology in the Classroom
  www.pre-kpages.com/technology.html
- Projector Buying Guide
  www.projectorbuyingguide.com
- Projector Central
  www.projectorcentral.com
- Scholastic: Integrating Technology
  http://teacher.scholastic.com/technology/index.htm

Sources

Branzburg, J. (2006, August). Effectively Use an LCD Projector, *Technology & Learning, 27, (1):* 38.

Careless, J. (2007, March). Digital Projectors Demystified. *Technology & Learning, 27,(8):* 8-14.

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