

Connecting K–12 Schools in Higher Education

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INTRODUCTION

Videoconferencing is the latest distance learning technology to hit K-12 (elementary and secondary) education. Distance learning in all of its forms—including correspondence courses, Internet, e-mail, radio, phone/fax, instructional television, videotape, and videoconferencing—is helping elementary and high schools across the country bring new, relevant, and expert content into classrooms. Students and teachers are able to work and learn with those who they can only connect with through technology. Distance learning allows students to participate in classes located at a far away school, connect to expert college or government researchers, and converse with others who live in a different culture than their own. High stakes government testing and increased teacher accountability are pushing elementary, middle, and high school teachers to engage students by finding new resources and using innovative techniques in the classroom.

ADVANTAGES OF VIDEOCONFERENCING

One advantage of videoconferencing over other types of distance learning is that it provides a real-time, synchronous learning experience that closely approximates a traditional classroom experience, where the instructor is in the same room as the students. In this medium, teachers and students can see and hear each other at the same time and conduct simultaneous discussions, just like a regular class. Teachers can use a variety of teaching strategies—such as discussion, small-group work, computer software, the Internet, reading, writing, videotape/DVD, kinesthetic activity, problem-based learning activities, and music/audio resources—in videoconferencing just as they use these in a traditional classroom. Other forms of distance learning can restrict the types of teaching strategies available to the instructor.

Another advantage of videoconferencing is that it is inherently collaborative in nature. To work effectively, it requires partnerships between classroom teachers and other educators, students, or content experts. Since it is a real-time audio and video connection, it works best when students are actively participating in the conference. A videoconference without student participation is nothing more than a videotape; without participation, it becomes a passive experience. Student engagement brings life to a lesson and enhances student recall of the information. Active involvement brings a heightened level of engagement, and videoconferencing lends itself well to this learning style. Through this technology, students are engaged in an authentic exchange of ideas, questions, and answers.

KINDERGARTEN TO GRADE 12 APPLICATIONS

Teachers in elementary and secondary schools are using videoconferencing in a variety of classroom applications. The most common use of this technology is taking virtual field trips. Staff at outside educational agencies such as museums, zoos, government agencies, and libraries can teach students across the country and the world. Students can benefit from resources at distant institutions that they could not visit on a school bus. Examples of virtual field trips include a Spanish language program from the Cleveland Museum of Art (n.d.), a discussion with a Holocaust survivor at the Museum of Tolerance (Berrien County Intermediate School District, 2000), a bio-terrorism briefing from Wright-Patterson Air Force Base (n.d.), a visit to the veterinary clinic at The Wilds (an endangered wildlife research and conservation park in Ohio) (2003), or an author visit from the California Center for the Book (2001).

Other uses of videoconferencing in elementary, middle, and high schools range from community service projects to collaborative partnerships between

schools. Some schools use this technology to provide educational opportunities, such as GED classes, local town meetings, and theatre and music performances, to the greater community. Teachers also use the technology to form team teaching partnerships, extend a student teacher/mentor teacher relationship into the student teacher's first year of teaching, provide tutoring to students at other schools, and offer unique classes such as AP (Advanced Placement), upper level foreign language, and specialty arts courses across an entire county through the expertise of a single teacher. For example, Clermont County, a rural county in southwest Ohio, has used videoconferencing to offer American Sign Language, Japanese, and German across multiple school districts (Geer, 1996).

How individual schools are using this equipment varies widely, and schools are finding more and more ways to introduce unique content to their students. A summary of some of the kinds of collaborations includes:

Teacher Partnerships

- Increasing the opportunity to expand curriculum.
- Ability to offer new educational courses, such as honors or arts classes.
- Exposing students to a greater variety of teachers.
- Teachers can team teach with remote teachers by sharing an area of expertise.
- One-on-one tutoring opportunities.
- Opportunities to have meetings with other schools and teachers without having to travel.

Virtual Field Trips

- Pre-visit experience before a "live" field trip.
- Student visits to students in remote schools.
- Workshops from museums, zoos, and science centers.
- Interviews with a professional scientist or experts in any other field.

Community Outreach Services

- Worker training programs.
- Town meetings or other government functions.
- Art and cultural community programs.

Specific Ideas for Using Videoconferencing in K-12 or College Classrooms

- Hands-on activity directed by an educator at a distant or local museum.
- Visit animals at a distant zoo.
- Learn about the ocean from a marine biologist.
- Videotape class discussions or presentations for a student who is in the hospital.
- Use videoconferencing to connect to a student who is in the hospital or is sick at home for an extended period of time.
- Talk to your local representative in the US House of Representatives.
- Interview a paleontologist in her lab or an artist in his studio.
- Learn about the Civil War from a Northern and a Southern perspective.
- Write and produce a play with a school in another state.
- View original artwork in distant cities.
- Visit a museum without permission slips or a bus!
- Have your students tutor students at another school.
- Watch a drama production from another school and discuss it with the actors.
- Ask a librarian about research techniques.
- Interview an author about a book the class is reading.
- Meet with university admissions officers for counseling or interviews.
- Tour an assembly factory and interview the staff.
- Have students present reports to another class.
- Conduct a debate with another school.
- Experience diverse cultures through collaboration with a distant school.
- Learn what it takes to be an astronaut through NASA programs.
- Meet with a classmate who is studying abroad.

In addition to all these applications, school district administrators are now finding that this technology, along with Internet technologies, provides new opportunities for professional development for teachers. Wright State University has offered a Master's Degree in Special Education to teachers in rural Highland

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