Learning Objectives & Thought Leadership

Four Key Interactive Classroom Technologies

Benefits of the Interactive Classroom

Challenges of the Interactive Classroom

Selecting Hardware and Software

Federal Grants Driving Investment

Best Practices: Developing Interactive Classrooms
From expanding secure wireless coverage to integrating AV equipment into a network's IP infrastructure, to dealing with the BYOD scenarios that change just about every school day, many tech teams are eager to create consistency, augment collaboration, and increase efficiencies across the campus. This workbook shares winning recipes for optimizing campus audio, interactive video, LMS, and telepresence. Our goal: help your tech team stay on track and ahead of schedule. We also share faculty-training essentials, so that the only thing the professors have to worry about is the beloved mid-term.
An interactive classroom involves
deployment of numerous techno-
gies. However, four technologies
in particular will help ensure an
effective space that supports collabo-
ration and peer-to-peer learning.

Interactive
tables /
computers

provide collaboration tools to cre-
ate and present interactive lessons.
These devices effectively function
as mobile interactive whiteboards.
When used in an interactive class-
room, their screens are easily
shared onto other surfaces while
the instructor moves around the
classroom. Modifying or annotating
the material displayed is a simple
process.

Interactive
displays

look much like regular flat-panel
televations but have a wide range
of additional functions and features.
They can typically display images in
portrait and landscape mode, and
display higher resolution computer
images better than standard TVs.
They can also offer touch-screen ca-
pability, and many support pen input.
Screen-sharing software can enable
interactive displays to show screens
from multiple devices. An instructor
with an interactive display can walk
around the classroom and choose to
display a screen from a student de-
vice and then can move effortlessly
between devices.

Wireless presentation systems

serve as interactive presentation gateways for wirelessly connecting content
and personal devices to an interactive display system. Users can wirelessly
display documents, presentations, photos, and videos from a PC, Mac, smart-
phone, or tablet directly onto the interactive display system without using ca-
bles and without loading drivers on the device. Some systems offer split-screen
modes that allow screens from multiple devices to be projected at once for
comparison or collaborations.

Cornerstones ↓

Lecture
capture systems

record and archive the content of
a lecture, conference, or seminar.
Hardware and software are used to
capture the audio and video. Other
items, such as a slideshow or pho-
tographs, can also be incorporated
into the recording. Modern lecture
recording software supports in-
dexing through Optical Character
Recognition (OCR), instant search,
real-time video editing, and anno-
tation, along with other advanced
features. Lecture capture is used
to archive traditional classroom
presentations for future use, and it
can also create additional reference
material to supplement what hap-
pens in the classroom. Captured
material is distributable via websites
or physical media such as DVD’s or
flash drives. It can also be integrated
into a Learning Management System
(LMS) and viewed from virtually any
type of digital display device.
THE Campus Collaboration Planning Guide

A guide to creating an interactive classroom, the technologies required, and what features to consider when selecting a particular technology.

Interactive classrooms are transforming the modern university. The University of Florida, for example, has changed the dynamics of teaching and learning by incorporating areas that encourage participation and collaboration. In one interactive classroom, desks and tables face each other and pop-up hubs provide connectivity. Projectors and screens display material from student devices connected to the hubs. Meanwhile, the instructor works from a table or from the middle of the classroom, integrating collaboration into the teaching and learning process.

The era of the "sage on the stage" is drawing to a close. Rather than sitting at rows of desks or in auditorium seating, students in today's interactive classrooms turn learning into a collaborative effort that leads to improved retention and greater long-term impact.

The key to creating collaborative learning opportunities is to equip classrooms with the latest advances in educational technologies. Some of the tools used in this process include interactive displays, wireless presentation equipment, lecture capture systems, and interactive tablets.

Benefits of the Interactive Classroom

Classrooms equipped with interactive technologies can offer numerous benefits for students, including:

**Improved collaboration** Research shows that problem solving, recall, and understanding are enhanced through collaborative learning opportunities. Collaboration between students not only includes localized small groups, but also global interactions. For example, at Allegheny College in Pennsylvania, a geography instructor arranged for his students to collaborate via video conference with students at an English-language college in Afghanistan. Students in each class prepared detailed reports about the physical and human geography of their towns and exchanged their findings in presentations to each other.

More active learning opportunities Being actively engaged in the learning process increases student motivation and leads to improved learning outcomes. Interactive technologies increase student engagement by minimizing time spent in passive lecture-based activity. Computers, especially web-based resources, can disseminate basic information more efficiently and more cost effectively than human beings. This information is deliverable in a variety of formats and is accessible at any time. Students can review course material when it is most convenient for them and return to it as often as they need to achieve comprehension and competency.

Greater peer-to-peer learning Some of the most effective ways to increase student understanding include peer conversations, active inquiry, and authentic debate. The technologies of an interactive classroom make it easier for students to share information, findings, and conclusions. This can take place between small groups within the classroom or globally with peers at other institutions. Within this context, students take more responsibility for their learning and construct meaning themselves, rather than passively absorbing information from a professor. Students work in established groups throughout the semester and are encouraged to work out solutions among themselves while instructors provide direction and feedback on learning concepts and performance. In a collaborative classroom, students work together much like in an office environment where employees collaborate on projects. This type of interactive learning environment helps prepare students for future success in the business world.

Simulations and interactive demonstrations With innovations like 3-D display technology, students can have a more hands-on learning experience. For example, Rice University recently created the school’s first 3-D visualization lab. By projecting data onto a 3-D stereoscopic immersive visualization wall, researchers create realistic renderings of volumes, surfaces, and illumination sources. An optical tracking system allows them to track their position among data and images in three dimensions.

Students see the possibilities in their field in an up-close and engaging way, and institutions are able to be more technologically responsive and competitive in higher education.
### CHALLENGES OF THE INTERACTIVE CLASSROOM

While the benefits are extensive and new models of learning are possible in interactive classrooms, there are challenges involved with creating these innovative learning spaces. Some of these include:

**IT support** New learning technologies must be explored and integrated into physical and virtual learning environments where the components are dynamic and evolving rapidly. Student academic outcomes continue to gain importance in higher education, and leveraging technology to improve these outcomes is vital. Finding the IT staff to support and sustain these ventures is challenging in a cost-constrained environment.

Locating solutions that require minimal IT support requires research, but the effort will result in long-term benefits. Purchasing equipment with long-term warranties that protect the investment will take some of the burden off of the IT department. Universities can also leverage contract services or managed services for support and maintenance. A vendor experienced in integrating interactive technologies can provide valuable input during this process, including product recommendations to minimize device/software conflicts, achieve cost-effectiveness, and reduce maintenance concerns.

**Flexibility** Designing multi-use spaces is a substantial challenge. These spaces need to be simple, flexible, and cost-effective. To meet this need, universities can create classrooms that have breakout areas for peer-to-peer collaboration, as well as space for traditional lectures. Ensure that multiple types of writing surfaces are available for students and instructors. Use interactive displays with the ability to switch between multiple screens to facilitate interaction. Enable students to use their own devices (BYOD), such as phones, tablets, and laptops to collaborate.

**Faculty resistance to learning new technology** Change is sometimes difficult under ideal circumstances, and making the move to interactive classrooms is particularly challenging when faculty members have to change the way they have worked for years. To meet this challenge, reach out to faculty teams and other groups to enlist their help in creating attractive and effective classroom spaces. Show faculty how the changes might look with practical classroom-based examples. Solicit ideas and input while maintaining the institution’s vision of an interactive classroom. Remove old technologies so faculty members are required to use the new technology without the option of defaulting to previous tools and methods.

**BYOD-friendly technology** Students expect interactive classrooms to support the use of their personal devices, but with the rapid evolution of these devices, standardization is nearly impossible. With the wide variety of connections these devices employ, providing connection points for every conceivable device would be a never-ending task. To make BYOD practical and feasible, provide HDMI inputs with the understanding that faculty and students are responsible for supplying cords and dongles that allow them to connect their own devices. Select core applications and technologies that are accessible to a variety of platforms and devices. Employ wireless capabilities as much as possible to minimize connection issues.

**WHAT TO CONSIDER**

Numerous factors should be evaluated when selecting hardware and software for an interactive classroom. The decision matrix below highlights the top three factors for each of the four technologies described above. Use the Priority Rank column to rank the features that are most important to you.

<table>
<thead>
<tr>
<th>Features</th>
<th>Why It Matters</th>
<th>Priority Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interactive Displays</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of screen</td>
<td>Larger screens offer greater visibility, but the size of the classroom should</td>
<td></td>
</tr>
<tr>
<td></td>
<td>be taken into account, as an overly large screen could overwhelm the room.</td>
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</tr>
<tr>
<td>Size of professor</td>
<td>Consider your users and mount the displays at a height that allows easy</td>
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</tr>
<tr>
<td>using the display</td>
<td>access to on-screen controls, as well as to the material being displayed.</td>
<td></td>
</tr>
<tr>
<td>Handwriting capabilities</td>
<td>Legibility is essential, as is minimizing latency in displaying handwriting.</td>
<td></td>
</tr>
<tr>
<td><strong>Interactive Tablets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of screen</td>
<td>Minimal latency will ensure greater clarity of handwriting.</td>
<td></td>
</tr>
<tr>
<td>Size of tablet</td>
<td>Ensure that tablets will fit comfortably on available lecterns to provide ease of use.</td>
<td></td>
</tr>
<tr>
<td>Software compatibility</td>
<td>Confirm that software packages conform to institutional standards, as well as to hardware in use.</td>
<td></td>
</tr>
<tr>
<td><strong>Wireless</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>Pricing may vary considerably between systems. Prioritize system capabilities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and confirm that essential features are included in a given price.</td>
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</tr>
<tr>
<td>Quality</td>
<td>Image quality varies from one system to another. Consider student quality needs and expectations, as well as the level of visual detail in course materials during system selection.</td>
<td></td>
</tr>
<tr>
<td>Functionality</td>
<td>Consider how materials are retrieved, whether through direct network access or from a device interface. Determine whether sequential (one user at a time) or simultaneous (multiple users) access is required.</td>
<td></td>
</tr>
<tr>
<td><strong>Lecture Capture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>The cost of these systems can be weighted heavily toward either hardware or software. Determine the strengths of your existing or planned infrastructure, then target systems that provide needed capabilities.</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>Determine if high-definition (HD) resolution is needed to produce acceptable output.</td>
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</tr>
<tr>
<td>Storage</td>
<td>Ensure that adequate space is available to store data such as audio and video, and that sufficient resources are available as more users begin using the system. Develop a protocol for cataloging captured materials to provide ease of access.</td>
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</tbody>
</table>
The Library of Tomorrow — Today

A new university library incorporates collaboration technology to create an engaging learning environment.

Whatever your preconceptions about what a library is, or can be, they might be changed when you walk into the James B. Hunt Jr. Library at North Carolina State University. The library sits on the N.C. State’s Centennial campus, which blends corporate and academic research and is home to the fourth-largest engineering school in the country. Within its 250,000 square feet are the fruits of a collaborative effort designed to create a new kind of library, one that would serve companies and academia as a research facility.

“...a traditional library wouldn’t work because that wasn’t the main focus,” explained Maurice York, director of NC State’s IT department. “We had to figure out what a research facility meant in this day and age. We’re really picky about our technology,” said York. “It was a very measured process of doing an evaluation of the companies. We needed companies flexible and open to the way they were willing to work with us.”

But while York and his staff could be picky about IT elements, which they know quite well, the AV world was new to them. “We knew we needed a lot of help to do this. We worked nearly two years to build up an ecosystem of partners to pitch the idea of this facility. The audio visual design is extremely complex because of those requirements.” AV technology integration firm, AVI-SPL was engaged to provide the solutions. “AVI-SPL’s role was to come in at the implementation level and bring that to reality.”

In explaining the concept of the library, York describes it as a technology sandbox for the campus, one able to support rare and experimental technologies that could be shared among the colleges.

“We didn’t go the conservative route,” York said. “We designed to the cutting edge, to equipment that had just been announced. Put it in a 24/7 facility and you provide something that has an immense amount of value and redefines the library.”

Supporting the Lifecycle of Research

AVI-SPL engineers and technicians transformed multiple library spaces into collaboration areas, including teams rooms, an auditorium, and conference rooms. In many of these areas, Christie Digital projectors provide the video. Other solutions include cameras, speakers, microphone boxes, Sharp video displays and Cisco video conferencing — all to create spaces designed for ease of collaboration and presentation.

A SMART Podium, which allows digital annotations during lectures, is in many of these spaces to support the collaborative environment.

Blamp AudiaFlex, a digital audio distribution system, manages all of the mixing and voice-over-IP, while AMX Modero touch panels give users control over each piece of audio visual equipment.

For a multipurpose space, AVI-SPL installed four screens and projectors, as well as wireless mics and speakers, and a portable capture workstation that records events and presentations and uploads them to the library’s media site for access by students and faculty. In the 3D Immersion Theater, 112 Christie MicroTiles (20-square inches each) extend in a curved array, 7 high by 16 wide. To facilitate communication with students, faculty and guests, Cisco digital media players feed information to 11 displays and three kiosks situated throughout the building.

The Creativity Studio was the most complex room of the integration. This configurable space can be used for gaming, windowing, and multi-led lighting. Users can use their hands like a computer mouse thanks to an interactivity touch kit from Christie.

In the Creativity Studio, students and engineering faculty watch a variety of media in the Immersion Theater. The IT workroom is, as AVI-SPL Project Manager Mike Cenzer called it, “the brains of the system,” an AV/IT hub featuring racks of equipment that host media it sends over fiber. All the AMX control ties into this, as does Christie’s video processing Vista Spyder. IT staff scan an access card across the AMX MXT touch panel to start the system and manage devices, including video conferencing. That centralization also makes it easier for one person to operate and maintain the technology.

York says this IP-based system supports the research and mission of the building, which is to work as an integrated whole that supports the lifecycle of research: brainstorming, critiquing, and the late phases that produce finished pieces. That system also provides a flexible environment where faculty and students can use any room, knowing the technology they need will be there.

The Tools to Create Tomorrow’s Technologies

As one learns about each area of the library, the reason for its popularity quickly becomes clear. This is a versatile, empowering space. Through its digital media network, powered by Cisco, the university sends notice of events, announcements, and other internally generated content.

State staff and engineers use the Cisco TelePresence room to connect with other universities and companies. Areas like the auditorium and multipurpose are used for lectures, watching live events and distance learning.

The Gaming Lab gave a home to N.C. State’s gaming research program, which is one of top 20 in the country. The program wanted a space that would allow different disciplines to collaborate. In this area, students play and study video games for new and classic systems on Christie MicroTiles in a 5-by-16 array. Vista Spyder processors deliver a full surround set-up, and an AMX system manages the screens for gaming, windowing, and multi-led lighting. Users can use their hands like a computer mouse thanks to an interactivity touch kit from Christie.

Students, staff and faculty watch a variety of media in the Immersion Theater. Behind the seating area, staff use a 20-inch AMX Modero touch panel to manage the content. The Art Wall, located above the “Ask Us” area, displays high-resolution images as well as movies across its 8-by-15 array of MicroTiles.

In the Creativity Studio, students and engineering faculty deliver presentations on surfaces like displays, the walls and floor. Theatrical lighting helps create environments that are realistic and work in conjunction with the visuals. Everything — including the walls, projectors and displays — is moveable, and the design offers easy access to equipment. Here, the Navy runs virtual training exercises by using audio visual solutions that allow them to simulate any vessel under any weather conditions and in any location.

“All the capability we hoped for is there,” York said.
FLEXIBLE CLASSROOM DESIGN

Effective interactive classrooms provide a variety of options for students and faculty to display information, engage in discussion, and perform classwork. Install furniture that is lightweight, moveable, and reconfigurable. Carpet floors will improve sound absorption. Install wheels on chairs to enable easy navigation and access to power and data outlets. Provide an instructor station that is small and mobile, giving the instructor the ability to move about the classroom, assist with discussions, and answer questions. Locate lighting fixtures close to projection screens for easy on/off access. Use indirect lighting to provide soft illumination, and install sensors to automatically turn lighting on or off as needed. Insulate the rooms and install individual climate controls to ensure a quiet and comfortable learning environment. When possible, interconnect classrooms to accommodate variations in class size.

VARIETY OF WRITING SPACES

Perimeter walls should have a variety of writing surfaces. Traditional whiteboards permit students and faculty to write key messages and record notes from brainstorming sessions. Make corkboards and magnetic surfaces available to accommodate paper materials and other notes that need to be displayed during class. Plentiful and spacious writing surfaces, including those on student desks and workstations, will also ensure that a class can continue uninterrupted in the event of a connectivity outage.

REDUNDANT TECHNOLOGY

Mount multiple electronic display surfaces on several walls. Make screens available for displaying projected images using ceiling-mounted projectors. Multiple wall-mounted flat-panel displays, 42" or larger, with the ability to shift from side to side will enable small workgroups to display computer-based materials. Choose audiovisual equipment with remote controls to provide easy access to network devices and control displays. Cameras mounted at the front and rear of the classroom will allow for lecture capture and recording of other activities to be distributed for later viewing, as well as provide capacity for teleconferencing.

GOOD ACOUSTICS AND SOUND THROUGHOUT ROOM

While many flat-panels are also equipped with built-in speakers, ceiling-mounted speakers provide clearer sound and sufficient volume. Speakers should be accessible by remote control, as well as by the instructor workstation. Install ceiling tiles and sound baffles to minimize ambient sound.

COLLABORATION AND BYOD ENVIRONMENT AND SUPPORT

Sufficient wireless connectivity is needed to accommodate a classroom full of mobile device users. Whenever possible, select platform-independent applications that are accessible by a wide range of devices and their associated operating systems.

WIRELESS AND HARDWIRED CONNECTIVITY AVAILABLE

Install hardwired outlets to provide support for ultra-high-bandwidth needs, such as high-definition online video and multi-site videoconferencing. Also include adequate wireless connectivity for low-impact applications and individual device connectivity. Make wall and floor-mounted power outlets plentiful for recharging mobile devices and powering portable equipment.

FACULTY TRAINING

Provide faculty with research and data on why and how a technology-supported, collaborative approach can improve teaching and learning. Offer training sessions to help educators consider how they would incorporate collaborative technologies into their existing lesson plans. These sessions encourage educators to rethink everything—from which data they project onto walls to how to share student work with the class. Familiarize faculty with the technologies used in an interactive classroom, as well as moveable tables and chairs and other elements of the space.

TEST DRIVE TECHNOLOGY

As much as possible, use a hands-on approach when evaluating potential technologies. Engage directly with any technology that might be considered for use in an interactive classroom. Site visits to nearby institutions with existing interactive classroom space can help faculty, students, administrators, and IT staff gain an idea of the technologies available to power the classroom, and observe them in use. Identify faculty members with a significant interest in educational technology, and involve them in hands-on testing whenever possible. Ask questions of those currently using these technologies to find out what they like, as well as what they would do differently if given the chance.

Best Practices →

Best Practices

Developing Interactive Classrooms

Use these best practices for the development of effective interactive classrooms taking into account the needs of students, faculty, IT staff, and administrators to help provide user-friendly learning spaces that are efficient and cost-effective.

AVTechnology Manager’s Workbook

Campus Collaboration Playbook

avnetwork.com

Campus Collaboration Playbook

AVTechnology Manager’s Workbook
Federal Grants Driving Investment in Video Collaboration in Colleges and Universities

State and local governments are responsible for educating and providing a host of other services to constituents. Unfortunately, with limited state resources and reduced budgets, severe and almost universal cuts in education funding have occurred in the past five years.

However, federal grant programs are available that make it possible for educators to implement programs, hire professionals and purchase technologies that enable them to better serve their students. Recently, many colleges and universities have used dollars from grant programs to purchase and implement video collaboration solutions to power key programs and initiatives. We recently had the opportunity to sit down with Tracie Bryant, the Vice President of State and Local Government and Education Sales at solution provider, AV-SP, to discuss what grant programs are available, why they were put in place and why colleges and universities are investing in video collaboration solutions with their grant dollars.

Here is what Tracie had to say:

Q: What are some of the funding challenges facing higher education?

Bryant: Funding is a huge challenge. What’s happening in our national and global economy impacts education. Education budgets tend to be one of the first things that are slashed. And when state funding is cut, then federal funding steps in and tries to fill in those gaps.

But when you have federal funding it’s usually based on demographics or specific programs. If an educational institution doesn’t have the resources to facilitate those programs and develop those programs, they still can’t partake in the funding. So that’s where you start to see another big trend — consortium building. They’ll develop a partnership of colleges, with two or three community colleges, a large university and then a maybe a technical college. And those four or five entities together will develop a program that can qualify for federal funding.

Q: What federal grant programs are available today for education?

Bryant: The main educational areas of focus — based on need as well as the grants to support the programs — are specifically for two year colleges and the development of public and private sector partnerships. Grants are provided by the Department of Labor (DOL) and the Department of Education (DOE). They require partnerships between community colleges, school districts, high-growth, high-demand industry employers and workforce development centers. These grants are all about career training. The grants funded through the DOL are called TAACCCT Grants and the Youth Career Connect Grant. Grant opportunities funded through the DOE are through their Office of Career, Technical, and Adult Education and include grants through their National Centers for Career and Technical Education.

Q: What are some of the educational or workforce trends that are driving federal funding?

Bryant: One of the biggest trends right now is open enrollment and secondary education programs that involve retraining individuals that have been previously in the workforce. These nontraditional students have been laid off when their jobs left the region, were automated or otherwise eliminated, and need to be trained in new skills and abilities. This additional job training allows them to gain employment when they can’t find jobs in their original area of expertise.

Q: What needs or pain points do educational institutions need to address with this grant money?

Bryant: The largest pain point is in the workforce. There is a shortage of qualified workers in emerging industries. This is typically in the more advanced, technical industries, such as aerospace, bioengineering, clean energy or healthcare. Educational institutions are building programs to train workers in highly-skilled, high-paying jobs, where they’re needed — and to get them out into the workforce more quickly.

For example, a high school student can simultaneously enroll in the community college and take job training courses. Then, an industry partner in a high-demand industry — like Boeing or a hospital system — will create an internship that coordinates with the program. Following graduation, the student would have a job waiting for them from that employer. This requires a partnership between the high school, the community college, the workforce development board and the employer.

Q: How do educational institutions determine what types of video collaboration solutions they need?

Bryant: A higher education institution will have a technology plan that outlines what they are trying to accomplish. But we can help by specifying the budget, prioritizing the equipment, labor, maintenance and training of the technology. We’ll also provide a narrative for them of how all of it is going to be used and how that equipment will enable them to facilitate the program that they’re driving.

Q: Why are they using the grant dollars on video collaboration?

Bryant: Video is a way to maintain the requisite partnerships across these disparate groups. It’s also a great way to continue education across the entire process and ensure that students have access to course materials regardless of time or location.

The need to train nontraditional students also makes video essential. They have responsibilities — families, part time jobs — that make it difficult to attend classes on a traditional schedule. Video enables them to take courses on demand, when their schedules allow.

Q: What other unique opportunities does video collaboration offer?

Bryant: One of the main factors in the development of these public and private sector initiatives is the use of technology in innovative ways to not only provide training and scholastic curriculum, but to also advance an industry’s effectiveness.

Utilized communications, with voice and video, allow multiple community organizations to develop a two year program, for example, with shared resources. Many of these institutions don’t have the instructors or the resources to facilitate the entire program on their own. The use of video and voice over IP communications allows students to attend courses face-to-face, be completely interactive, have access to learning management systems that are online and participate in active environments without having to be there physically.

Utilized communications also fosters those mentoring and the internship programs. Students are able to participate not just in the scholastic-based curriculum, but also in a mentoring program and active-based job training as well.

Q: How is their investment of grant dollars into collaboration technologies helping communities?

Bryant: Ultimately, the community is the one to benefit from these programs. These workers will enter the workforce, where they’ll make a difference and drive the local economy. This is why the grants require such a partnership between multiple community organizations.

Q: What resources are available to educational institutions that are looking to acquire grant dollars to help them meet their collaboration needs?

Bryant: Collaboration vendors can certainly be a resource. We understand the business case, the applications. We design the environment that the technology fits into, and we provide the technology solutions for these programs.

Collaboration equipment manufacturers are also key. Cisco, for example, works with grant managers and grant service organizations to assist educational entities with not only finding funding for their projects, but also then helping them apply for the funds and submitting that application on their behalf. And then they work with a vendor like us to specify the equipment, to perform the installation and implementa- tion services, and to provide end user training.

Collaboration manufacturers like Cisco are very good and very successful in helping colleges and universities acquire federal funding.

In addition, there are plenty of workshops and seminars available through organizations such as grants.gov.

One thing I would like to stress is that administrators and technology specialists do not need to be an expert in grant writing and available grant programs. All they have to do is have an interest. Private partners can help not only with finding funding for projects, but with applying and submitting applications on an institution’s behalf. If they’re interested and in need, private partners will connect them to the appropriate resources and handle the rest.

Note: Some content for this article was taken from the Public Sector View interview with Tracie Bryant.
A Team Collaboration

Videoconferencing is used to enhance the University of Oregon’s football recruiting efforts and to connect with staff.

As collegiate sports environments begin to reach competition levels similar to that of today’s top professional teams, university athletic programs have started to invest in new areas affecting both athletes and the greater success of their sporting organizations. Traditional athletic practices such as player training, staff teaching, and game strategy are now being complemented with new assets such as contemporary wellness programs, state-of-the-art medical centers, videoconferencing, and engaging leisure spaces designed to create closer communities where player synergy can thrive. As a result of this all-encompassing approach, university sports programs have needed to rethink the programs, strategies, and the facilities where they prepare, train, and educate players both on and off the field.

At the center of this rising transformation is the availability of new technology. Athletic facilities are turning sports programs into experiences that are better equipped to handle the extreme competition of university-level sports. Smarter building construction, larger-than-life video, and thundering audio capabilities available via integrated systems are the new backbone of these state-of-the-art facilities.

Leading this new wave of forward-thinking facility development is the University of Oregon’s (UO) Hatfield-Dowlin Complex. Completed in the fall of 2013, the center boasts groundbreaking technology and training capabilities, which rival the amenities provided to leading professional athletes. Designed for the university’s Ducks football program, the new 145,000 square foot structure includes a 170-seat theater, 5,000 square foot weight room, dedicated cafeteria, locker rooms, lounges, meeting rooms, and much more.

Technology in Play
Founded in 1876, UO was seeking to cement its legacy as a premier learning institution while turning the sports center into a tremendous athletic force. The university’s main athletic program, the first-division NCAA Oregon Ducks football team, would be the center of this revolution by surrounding the team with a new NFL-grade football performance center. Funded entirely by Nike founder and UO alumnus Phil Knight, the world-class facility would allow the university to continue fielding elite teams while bolstering the institution’s recruitment efforts by attracting top talent from across the country and the world.

A second major area of interest for the university was ensuring optimal education capabilities. With young football players entering the program directly from high school, the Ducks organization wanted to ensure a seamless, successful transition into high profile, NCAA-level sports. Within the building, this meant marrying design and technology to give coaches and staff members the tools needed to transform their educational objectives into tangible plans and strategies.

Outside the building, the organization also wanted to use technology to turn its practice fields into training grounds that closely mimicked the contentious atmosphere of football stadiums, thus supplementing football training with game-type situations.

Fielding Elite Teams Using Videoconferencing
To turn the University of Oregon’s world-class vision into reality, project staff employed a leading team of architects, designers, and integration firms. When it came to specific systems and components to support the football facility’s grand design, systems integrator CompView was selected to implement the audio and video solutions that would bring the new football complex to life.

To ensure effective recruiting and allow coaches to engage with off-premise staff members, a cutting-edge videoconferencing room was built. Biamp’s Nexia CS digital signal processor was implemented to allow participants to link up to 10 mic/line inputs and six mic/line outputs in addition to a variety of audio processing features that enabled the integrator to counter audio challenges related to the room’s hard, flat surfaces. As a result, the coaching staff experiences crystal-clear audio when collaborating with other universities via conference calls or interviewing potential students despite the room’s reverberant design materials.

As part of the team’s objective to keep athletes in top shape, the new weight room — an impressive two-story area of 5,000 square feet overlooking practice fields — was equipped with the most advanced weight training and strengthening gear available. To motivate players and bring an extra level of intensity to their workouts, Biamp’s AudiaFLEX digital audio platform was implemented to provide the bass-pounding audio that inspires players during their workouts.

The Coach is Everywhere
To help the coaching staff educate players about the game and their performance, a network of digital signage panels, video walls, and projectors span across the facility’s many meeting places. Supported by a combination of Biamp’s Nexia networking products and AudiaFLEX units, the system provides the flexible audio output capabilities and digital signal processing power required for ensuring that all audio and background music is provided with utmost clarity and strength across the complex — fully engaging players for learning or training situations. Furthermore, the Biamp audio solution allows coaches to speak to players via wireless microphones to accommodate impromptu meetings anytime, anywhere.
Case Study: University of Oregon

For their outside practice field, where the Oregon Ducks put their strategic sessions and training plans into play, coaching staff were looking to recreate the same raucous stadium atmosphere that is experienced during tense game-time situations. This meant replicating crowd noise in volumes of up to 115 decibels, specifically addressing the field’s surrounding structural challenges, which caused sound reflections from buildings in the vicinity. To overcome this hurdle, CompView turned to Blamp’s AudiaFLEX platform to provide both the audio capabilities and flexibility to adjust sound properties until the audio quality was just right. Running on CobraNet, AudiaFLEX also allows the university’s AV staff to control and adjust sound properties within the practice field and throughout the entire facility from multiple points, including the center’s state-of-the-art main control room.

To create a greater sense of community, players and coaches have access to common areas within the facility where they can gather during downtime. For example, a players’ lounge where teammates can rest, recuperate, and relax by enjoying a game of pool, foosball, or console gaming. Complementing the experience is full connectivity to the facility’s main Biamp-powered audio system, which allows players and guests to listen to background music and remain informed of special announcements from coaching personnel without audio compromises caused by the space’s surrounding glass walls.

Results

In constructing its new Hatfield-Dowlin Football Complex, the University of Oregon has changed the way colleges attract talent to their programs. Instead of solely investing in fan-based areas such as stadiums and merchandising, UO chose to turn its efforts inward by targeting both future and present-day students, athletes, and coaching staff. Since the inauguration of the new complex, student-athletes have experienced strong athletic and academic results. "When you ask students what their concerns are, and what they would like to learn and how, the newest technologies are top of mind," said Joseph Martinez, Rialto School Board trustee member.

In accordance with the school's funding requirements, AVI-SPL had to complete this fast-tracked project in just 130 days.

Communications from a Centralized Platform

AVI-SPL completed the project on time, working closely with Rialto and Cisco to make sure milestones were met. At the end of its four-month window, AVI-SPL had implemented the largest deployment of Cisco TelePresence and digital media in any school district in the nation.

Cisco Digital Media Players in 72 classrooms throughout the district facilitate digital signage, IPTV and over-the-air broadcast TV. Additional digital signage displays and media players in areas outside the classroom, such as lobbies and hallways, were added to deliver news, event information and wayfinding assistance.

Extending The Virtual Classroom

The custom Cisco T3 TelePresence, located in a room within the library, empowers students to take virtual field trips to museums and interact with guest lecturers from remote locations. It also utilizes Cisco’s Enterprise Content Delivery System (ECCS), which helps Rialto easily scale and quickly retrieve video and media over its existing WAN infrastructure. Since the integration was finalized in November 2011, students at Rialto Middle School have used Cisco TelePresence for virtual field trips to NASA and the Great Barrier Reef. During another virtual field trip, students interacted with middle school students from San Diego to learn about Chinese culture.

"Almost immediately, the students were engaged, they were focused, and they wanted to learn," said Martinez.

With positive feedback from parents, students and teachers alike, three additional virtual field trips had been planned for the remainder of the school year.

"With the integration of this technology, retention and collaboration has increased, because the students are able to learn in a medium that they interface with by choice all day long," says Martinez.

Using Cisco’s Show and Share, teachers and students can create and upload video presentations, instructional lessons and other content that can be obtained on demand on a variety of devices— including desktop computer, iPhone, and digital signage display. With Digital Signs, Rialto can also design, deliver and manage a library of digital signage content from a centralized system.

Such is Rialto Middle School’s commitment to the new technology that it has developed elective courses in which the students learn how to create content and push it to the digital media players so that they can teach other students and faculty.

"AVI-SPL has become a partner with us in education," says Martinez. "They are there when we need them."

Case Study: Rialto Unified School District

Engaging Students In a New Way

A school looking to give its students a jump on technology connect students and educators from around the world.

Rialto Unified School District, one of the nation's largest, engaged AV technology integration firm, AVI-SPL to deliver communication systems that would transform the way the school teaches and conducts business.

District leaders wanted a system — built on Cisco architecture — based on high-definition, networked video that would build awareness of educational initiatives and address emergency situations with immediate notifications. By incorporating video and distance learning, Rialto also sought to bring a prestigious "university" feel to its schools.

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CONFERENCE CALL: 1:14 PM

THE DIFFERENCE BETWEEN A DEAL & A DEAD END

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