

Wake Forest University Enriches the Educational Experience with Pioneering Use of Collaboration Technology

Cisco Collaboration for Higher Education

Continuing its tradition of technology innovation, Wake Forest reinvents the classroom and forges stronger links among students, teachers, and administrators with advanced collaboration and social media solutions.

HIGHLIGHTS
<p>CUSTOMER PROFILE</p> <ul style="list-style-type: none"> • Customer: Wake Forest University • Industry: Higher education • Employees: Approx. 1500 administrative and 690 academic staff • Students: Approx. 4800 undergraduates, 1600 graduate students
<p>BUSINESS PRIORITIES</p> <ul style="list-style-type: none"> • Enhance student engagement by removing barriers of time and space • Improve access to experts through video, voice, and social connections • Enhance research capabilities by improving professor productivity • Connect global colleagues with high-quality video experiences • Enable social and community commitments through collaboration
<p>CISCO SOLUTIONS</p> <ul style="list-style-type: none"> • Cisco WebEx, WebEx Social, Jabber, Cisco TelePresence, Show and Share, Media Experience Engine
<p>RESULTS</p> <ul style="list-style-type: none"> • Enabled new teaching models, including flipped classrooms • Expanded access to professors with “online office hours” • Helped students stay connected while studying abroad • Accelerated research projects with video collaboration and social media • Simplified grant-funding process • Boosted administrative productivity with virtual meetings and training

Forging the Future

Offering the personal attention of a small liberal arts college, coupled with the breadth and global relevancy of a leading research institution, Wake Forest is consistently ranked among the top universities in the nation. The university’s mission is to educate the whole person, graduating students who seek purpose-filled lives while building a community dedicated to serving humanity in the spirit of Wake Forest’s motto, Pro Humanitate.

Wake Forest has earned a reputation in recent years as a technology leader. In the 1990s Wake Forest was the first liberal arts college to issue a laptop to every new student, a hugely successful program later copied by hundreds of universities nationwide and laying the foundation for a collaborative culture resident across the campus today.



The laptop rollout kicked off the university’s long-range strategy aimed at using technology to transform the university experience. “Wake delivers more than just an academic education,” says Gordon McCray, senior associate dean at the Wake Forest University Schools of Business.

“It prepares students to be leaders in their communities and careers. The tools that the students use at Wake should translate into their daily lives once they graduate.”

Changing Conditions

There’s no question that the professional world has changed dramatically in the last couple of decades. Companies now expect employees to master the latest computing devices along with the applications and knowledge bases they harness. New careers also demand the ability to work in teams with a diverse mix of colleagues spanning several cultures and continents.

Not surprisingly, students are leading the charge for more technology in higher education. Raised on a diet of web surfing and social media, they are clamoring to bring the tools that power their personal productivity into their academic lives. And if students can’t find the knowledge they’re seeking on campus, they turn to the web and elsewhere to find it. One result of this is the rise of new online education models, including massive open online courses (MOOCs), which are emerging as a rival to traditional classroom-based institutions.

But when it comes to technology, universities can be slow learners. Many professors are leery of new web-based educational models that require them to invest time in changing tried-and-true classroom techniques. Other professors, being scientists at heart, demand empirical evidence of success before switching to new learning models. Provosts, deans, and other administrators, for their part, are typically reluctant to pressure faculty into adopting new teaching models.

Wake Forest’s Edge

The situation has evolved differently at Wake Forest. After breaking new ground with the laptop program, the university has continued to put technology innovation at the top of its planning agenda. In the last few years, for example, the university launched a series of technology initiatives - in partnership with Cisco and other technology leaders - designed to boost collaboration capabilities across the university. “Collaboration provides an equal, if not greater, opportunity to innovate,” says Rick Matthews, chief information officer at Wake Forest.



Wake Forest’s most recent initiative involves deploying a broad set of collaboration technologies as the basis for introducing powerful new teaching methods and promoting skills that will help students get ahead in an increasingly digital, mobile, and social media-dominated world. Not least, the university sees its collaboration initiative as a means to further strengthen the bonds between students and teachers - an effort very much aligned with Wake Forest’s longstanding tradition of offering a more personalized educational setting.

As it seeks to roll out collaboration technologies across the campus, Wake Forest holds an edge over most universities. First of all, the university has a long tradition of promoting an “equal access to all” environment that fosters communication and collaboration across the institution, as evidenced by its pioneering laptop distribution program in the 1990s. Second, its university leaders stand firmly behind technology innovation and remain committed to removing barriers to collaborative learning approaches. In fact, in the first project undertaken by its current provost, collaborative leadership was a fundamental objective. “My first project at Wake Forest was to look into wellness. Instead of applying a template, I reached out to the 52 organizations that touched the topic,” says Rogan Kersh, provost and chief academic officer, Wake Forest University. “By collaborating across these groups, plus outside experts, together we were able to address the spiritual, physical, and environmental aspects and provide a comprehensive approach for the university.”

Just as crucial is the role played by Wake Forest’s Information Systems (IS) group, directed by CIO Matthews. “IT has a seat at the table alongside university leadership and faculty to identify and roll out new technologies and provide ongoing assessment support,” he says.

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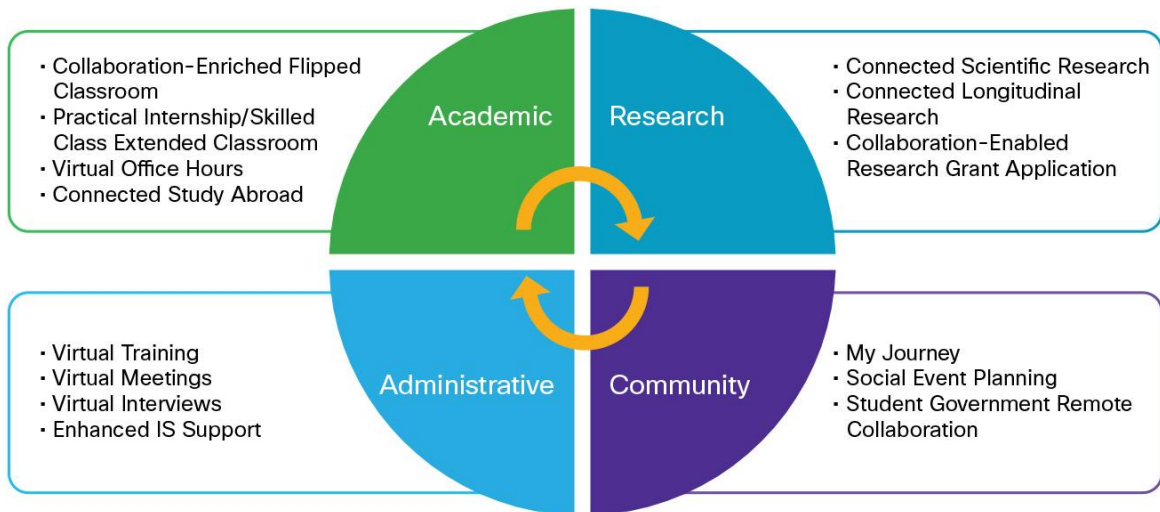
— Rogan Kersh, Provost and Chief Academic Officer, Wake Forest University

Touching the Whole University

Wake Forest’s collaboration initiative, which deploys Cisco TelePresence[®], knowledge sharing, and social media platforms, touches every aspect of university life (see Figure 1). It empowers students with tools that expand access to teachers and stay connected when studying abroad. It helps professors enrich the learning experience with video-enabled “flipped” classrooms and simplifies research projects with distance-bridging collaboration tools. Administrators benefit from solutions fostered by collaboration that bolster business efficiency, and the wider community reaps returns from a student body that is better prepared to enter the work world.

“Collaboration provides an opportunity to enhance all aspects of the university, from the classroom to research, from administration to community,” says Nancy Crouch, deputy CIO at Wake Forest. “We’re just at the start of a new wave of collaboration at Wake Forest that will change the way we work and live at the university and beyond.” The following sections explore in detail how Wake Forest is putting collaboration technologies to use in each of these settings.

Figure 1. Collaboration Technology: Affecting All Areas of the University



Collaboration in Action: Transforming Academics

Improving the academic experience - for both students and professors - lies at the heart of Wake Forest's collaboration initiative. Although many of the projects are still in their early phases, results are encouraging.

Collaboration-Enriched “Flipped” Classrooms

Collaboration technology is giving Wake Forest teachers and students a fresh outlook on the classroom, overturning conventional teaching routines, and allowing teachers to spend more time interacting with students instead of lecturing. The new collaboration technologies - including Cisco® WebEx® and WebEx Social - are in the early stages of testing and deployment at the university, but professors such as Steve Nickles at the Wake Forest School of Law are already harnessing them to radically restructure the way he runs many of his courses.

“I’m extremely excited about the potential for using video and social media to transform the classroom and turn it into a significantly more productive environment for learning,” says Nickles, the C. C. Hope Chair in Law and Management at Wake Forest, who has been spearheading the use of collaboration technologies at the law school and breaking new ground by blending synchronous and asynchronous methods to enrich the classroom experience.

Among other innovations, Nickles started launching video sessions during classes, in effect bringing experts located miles away into direct conversations with students through high-definition displays. The professor is also using the WebEx platform to host virtual classes from his home office, where he views close-ups of each student arrayed in boxes on a big screen. The platform enables Nickles to address the entire group or single out individuals for questioning; meanwhile students can chime in with instant messages. “In many ways it’s more intimate than a regular classroom,” Nickles says.

The new tools are giving professors the ability to enrich the “flipped” course approach that is traditionally employed in a Socratic pedagogy, dramatically improving student performance in the process. In the past, for example, law students digested case-reading assignments ahead of time and prepared for the possibility of being grilled by the professor during class. The preparation process was both isolating and intimidating, and the ensuing “Socratic” dialogues with randomly selected students often explored only narrow facets of the case.

This process was repeated throughout the semester, with students cramming just before the final test. Professors generally had only limited visibility into how students were progressing during the semester.

Collaboration technology is changing this model, with the casebook now becoming just one of many tools that students use to prepare for class. Rather than reading from a single source in isolation, Wake Forest students connect to their WebEx Social platform to browse wikis and blogs, examine online articles and videos posted by the professor, and share opinions with classmates ahead of class time. Professor Nickles also uses these techniques to foster student engagement in preparation for the bar exam.

Students now enter a vastly different type of classroom, where the professor might decide to engage students virtually instead of in person, share online videos and web content throughout the semester, and connect to remote experts - including working lawyers and judges - to discuss critical cases. Throughout the semester, students tap the same collaboration platform to “click to chat” with professors during “virtual” office hours. As one law student remarked, “The course feels more like a personal tutorial. More like ‘me and the professor.’”

“Flipping” a Classroom

Wikipedia defines flip teaching (or flipped classroom) as a “form of blended learning which encompasses any use of technology to leverage the learning in a classroom, so a teacher can spend more time interacting with students instead of lecturing. This is most commonly being done using teacher-created videos that students view outside of class time. It is also known as backwards classroom, reverse instruction, flipping the classroom, and reverse teaching.”

“Wake has a two-pronged approach for exploring new technologies. One, take advantage of strong partnerships like that with Cisco. Two, an organized IT call-for-proposals process for faculty to identify new solutions with the opportunity to make ubiquitous at Wake.”

— Jacque Fetrow, Dean of Liberal Arts College, Wake Forest University

Reinventing Internships with Video and Video Distribution Tools

To prepare for professions such as counseling, education, and medicine, students normally augment classroom learning with practical training and internships outside of school. Such real-world training is essential but can pose several challenges, including logistical challenges for graduate students, who often are balancing work and school responsibilities, and experiential learning challenges for both graduate and undergraduate students trying to improve their counseling “soft skills.”

These challenges are spurring Wake Forest to integrate collaboration technologies into its offsite training and internship programs, first being piloted by an innovative graduate counseling program. Now, students can record videos of their practice sessions on WebEx and share with their professors, who can watch the sessions later. As a second phase, professors will be able to post feedback with tools such as Cisco Show and Share[®] and collaborate asynchronously with their students.

After this tool has been deployed, the videos will be stored in searchable libraries; students and professors can retrieve and edit the clips, incorporate “best practices” into future lessons, or post to a private group forum and invite that group to discuss improvement opportunities. Using collaboration in this way will help students critique their capabilities and identify primary opportunities to improve and track progress throughout the term.

The ability to conduct these sessions remotely also reduces the logistical travel, time, and expense requirements of the course, opening the opportunities for students from longer distances and continuing their careers while attending the program.

Online Office Hours: Improving Access to Professors

For an institution that prides itself on delivering an intimate educational experience, Wake Forest has been keen to make sure students get generous access to teachers outside the classroom. But that's not always easy, given the constraints of school and work schedules - and some students are simply intimidated by the prospect of face-to-face meetings with professors. It's estimated that students fail to take advantage of a teacher's office hours about half the time, with graduate students living off campus facing the most difficulty in arranging meetings. The result: students are too often left with unanswered questions and uncertain guidance that can impede academic progress.



Collaboration technology is changing this picture by opening up convenient virtual channels of communication that remove barriers of time and distance. At Wake Forest, professors are learning to use instant messaging tools such as Cisco Jabber® to “leave the door open” to students wherever they happen to be. Through the interface, students can see whether the professor or teaching assistant is “present” and available online and then launch a chat session with a single click.

Ample options are available to enhance these virtual interactions. For example, the student and teacher can move transparently from a keyboard chat to a live video call using Jabber, WebEx, or Google Hangout, taking advantage of features such as desktop sharing. Some professors might choose to initiate a WebEx videoconference at the start of office hours and keep it running for the duration, inviting students to join the call anytime during this window. Others might want to record selected office sessions to capture discussions around common issues and make them available to the rest of the class through postings on WebEx Social or on the university's Learning Management System.

Staying Connected When Studying Abroad

Most universities offer a study abroad program, but at Wake it is part of the college experience, with more than 60 percent of the students taking advantage of the program. The Study Abroad Program is often one of the high points of a student's university career, but it can also be a stressful and complicated time: Students often feel nervous about the logistics of living overseas and how to stay on track academically while they explore foreign cultures. Many students end up feeling out of touch with campus life back home and struggle to reconnect when they return to Wake Forest. Administrators at the university's Office of Global Affairs are also seeking more effective ways to communicate with Wake Forest's international offices, schools, and host families.

Collaboration and social media platforms are ideal tools for helping students make the move abroad and stay connected with home and academically focused while they're there. Wake Forest students are now using tools such as Google Calendar to help schedule the trip and launching WebEx calls to connect with foreign schools and host families before leaving the country. The university eventually wants to enhance these orientations by adding immersive video capabilities through Cisco TelePresence.

While living abroad, Wake Forest students stay plugged into academic life back home, using WebEx to attend classes virtually. The tool is proving to be especially effective for science students, who often struggle to find technical subjects in foreign universities that would allow them to graduate on time. Business students abroad are also benefiting from a unique management accounting course that creates a planned team-based learning program in which the professor shares work assignments virtually through Google Docs and WebEx. The professor then uses the collaboration tools to track a group's progress and provide any corrective actions while the students maximize their time abroad experiencing the culture of their host countries.

These same collaboration and social media technologies are making it easier for students studying abroad to stay in touch with friends and colleagues back home. For example, the university invites its overseas contingent to real-time "late night breakfasts" hosted on videoconferencing platforms such as WebEx and Cisco TelePresence. And when time differences get in the way, students will be able to turn to asynchronous tools such as Show and Share and WebEx Social to stay current with the social scene back home. Students say that all these connections make it easier to reacquaint themselves to campus life when they eventually return to Wake Forest.

Collaboration in Action: Connecting Researchers

Breakthroughs in science are almost always a team effort, which is why Wake Forest has invested heavily in equipping its researchers with collaboration tools that are maximizing productivity, controlling costs, and helping to secure grant funding.

Connecting Scientists on Two Coasts

Researchers at Wake Forest are making remarkable progress in the field of computational biophysics, but they're not doing it alone. To solve complex problems and accelerate breakthroughs, they are teaming with software engineers at the University of California at San Francisco (UCSF). In the past, the cross-country collaborative effort created logistical barriers that slowed progress. Researchers said that phone calls and emails didn't provide enough context for rapid problem solving. Instead, they needed to share screens, whiteboards, and video. Long-distance business trips were a helpful but costly option.

Integrating collaboration technologies into the joint effort has had a huge effect on researchers' productivity. Using WebEx videoconferencing and desktop sharing, software engineers from San Francisco can look at the computer screens of Wake Forest researchers and then take remote control of the machine to solve problems directly. Teams now use Google Docs to share project documents, and they are looking at using the WebEx Social platform to pull in ideas from researchers worldwide. The program also benefits by reining in travel costs.

Collaboration-Powered Longitudinal Research

To study the role of higher education in American democracy, Wake Forest and the Kettering Foundation have joined together in an ambitious decades-long research project entailing in-depth interviews with subjects located all over the United States. But the difficulty of coordinating the joint effort over the phone frustrated researchers, who were also concerned that phone interviews alone wouldn't yield the kind of high-quality feedback they needed.



Here too, collaboration technology has provided a cost-effective solution, allowing researchers to conduct video interviews that yield the same rich visual cues as an in-person interview. Teams use the same platform to review project status, discuss findings, and share documents, and they are now contemplating the use of WebEx Social to gather comments from the extended team and considering immersive video studios for groupwide meetings. From a budget perspective, the collaboration platform has helped Wake Forest dramatically cut travel and interviewing costs while accelerating data collection and analysis.

Simplified Grant Applications

With most of its research projects dependent on grant funding, Wake Forest is deploying its collaboration platform to boost the speed and efficiency of its grant application process: a traditionally time-consuming and expensive effort engaging teams of specialized resources spread around the campus and beyond. Contributors typically have other project duties, making schedule coordination difficult; and with documents and emails crisscrossing departments, the process is easily stymied by version-control issues.

Wake Forest's collaboration initiative is changing this situation. Research teams are standardizing on cloud-based Google Docs to avoid versioning problems and speeding the application process with tools that enable ongoing asynchronous development of the document. Managers say that WebEx with desktop sharing will improve the team reviews of in-progress applications.

Collaboration in Action: Uniting Communities

Wake Forest is part of a larger community that embraces its graduates as they embark on their lifelong journeys. Collaboration technologies are helping the university build the confidence and character of students as they prepare for the years ahead.

“My Journey” Virtual Events

Wake Forest understands that a student’s journey from high school through college encompasses a series of transitions, which is why it seeks to support the process with student-development programs such as “My Journey.” Studying abroad is one of those transitions, as is the graduation from high school to college, which can test a student’s character with new challenges and responsibilities. The university is enlisting collaboration technologies to augment its My Journey programs with multichannel communications and social media capabilities.

Wake Forest’s Campus Life organization supports the development program by broadcasting live campus events to students studying abroad and reaching out to first year students through social media forums such as Facebook, Twitter, and the Wake Blog. “It really helps them adjust to college life,” says Amanda Horton, assistant director of Campus Life at Wake Forest. The university is currently exploring initiatives, such as creating a video library of school events and developmental tips, to help students through important phases of their careers.

“Wake has a rich history as a technology innovator dating back to the 1990s, when we were one of the first universities to provide laptops to all students.”

— Rick Matthews, CIO, Wake Forest University

Empowering Student Government and Social Events

Collaboration technologies are being deployed in a variety of ways to unite the Wake Forest student community. The university’s student government organization, for example, is using online videoconferencing to facilitate meetings of the intercollegiate student body President’s Council, which shares best practices in student government. The video platform provided a convenient way to bridge distance and merge the schedules of dozens of participants nationwide.

The university’s popular Wake ’N Shake event is another example of how collaboration solutions can overcome hurdles when organizing large-scale events: in this case, an annual 12-hour dance marathon benefiting the Brian Piccolo Cancer Research Fund. Employing virtual face-to-face meetings, the three event chairpersons, scattered around the country on summer break, effectively coordinated activities for the charity event. “The visual interactions really helped us come together quickly on what we needed to do and solidified our working relationships,” said one of the chairpersons. Wake Forest is now envisioning similar online collaboration and social media tools to support the institution’s United Way campaign.

Collaboration in Action: Simplifying Administration

Although its academic and research programs often steal the limelight, a world-class university also needs to excel at the business side of running a large and complex organization. Wake Forest is no exception, and it’s marshaling collaboration technologies to enhance training programs, control costs, and keep its more than 1500 administrative staffers working at peak efficiency.

Cost-Effective Virtual Training

Wake Forest offers a range of training programs for administrators, including classes in how to manage the university's financial and computer systems, conduct inclusion and diversity (I&D) training, and coach students in career and professional development. Coordinating these classes is difficult and costly, so Wake Forest is introducing collaboration tools to simplify the process. Today the university is saving travel costs for class participants with virtual in-person classes based on WebEx and expanding access by recording classes for anytime online viewing.

Virtual Trustee Meetings

University trustees and executives have started connecting to the new collaboration platform, which allows them to attend meetings virtually using WebEx when they can't show up in person. Administrators are also using video collaboration for smaller meetings, easing the travel burden on employees, who often had to drive across town to attend short workgroup sessions. Executives say that the platform helps keep them up to date when they are on the road and allows for faster decision making. Enhancements such as high-definition Cisco TelePresence capabilities combined with Jabber Video for one-click conferencing on demand are being explored for important meetings.

Improved Recruiting

Administrators across several departments see tremendous potential in using WebEx and Cisco TelePresence videoconferencing to make recruiting and screening interviews more efficient and effective. They note that adding the video platform will mark an improvement over phone interviews, giving university screeners a fuller sense of what job and program applicants are like. The university also hopes to set up videoconferencing facilities where graduating students can participate in job interviews with potential employers anywhere in the world, saving on travel costs and widening the pool of job opportunities.

Uninterrupted Learning

Online collaboration platforms are helping Wake Forest manage severe weather and other emergencies by getting the word out about class cancellations. Here's how it works:

1. Emergency situations are broadcasted to professors and students by office and registered personal cell phones and email on mobile computing devices.
2. Cisco WebEx and Cisco TelePresence video invites are set up by professors and sent to students for virtual classes. Professors and students dial in using Cisco WebEx, Cisco TelePresence, or Jabber. Classes are recorded for future reference by students.

Business effects: Reduce emergency class cancellation; avoid delays in educational process; alleviate the burden on instructors to make adjustments to lectures caused by cancelled classes.

Enhanced IT Support

Wake Forest's Information Systems department is eagerly embracing new online collaboration systems - specifically WebEx Support Center - to deliver faster, more effective support services for computer users across campus. The online customer-service solution allows the university's IS teams to diagnose and fix most problems remotely. The result has been dramatic, with the department reporting more than 75 percent faster ticket resolution time, including for students living overseas. And by significantly avoiding in-person service visits, the university's help desk is controlling costs and expanding services without adding staff.

Building Momentum

With early successes under its belt, Wake Forest now faces the prospect of sustaining the momentum of its collaboration initiative and extending it into more organizations and programs across the campus. To this end, administrators and teachers can point to these early achievements as empirical evidence that collaboration technology can bring meaningful improvements to classrooms, research labs, and administrative offices.

Intelligent marketing and scaling of new collaboration solutions will be crucial to gaining acceptance among skeptics, and organizations will be wise to pilot solutions and gather feedback before implementing them globally. Significant opportunities exist for augmenting existing collaboration solutions, including the study abroad program, executive meetings, and research projects, by incorporating immersive HD videoconferencing capabilities. New value can also be captured by finding ways to more widely deploy searchable online video libraries.

For More Information

To find out more about the Cisco Collaboration solutions for Higher Education, go to http://www.cisco.com/web/strategy/education/higher_education.html.

This case study is a product of Cisco Consulting Services' Collaboration, Video and Mobility Practice. This team of business consultants helps clients & partners identify, quantify and realize the value of collaboration, video, and mobility solutions. Please email ccs-collab@cisco.com to find out more about our transformational services.



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