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EDUCATION LEADERS ON...

Planning the Unplannable: IT Management of Anytime-Anywhere Learning

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INSIGHT SERIES: EDUCATION LEADERS ON...

Planning the Unplannable: IT Management of Anytime-Anywhere Learning

Learning and instruction are changing in higher education, owing largely to the proliferation of consumer technologies on today's campuses. A growing number of institutions are moving away from the traditional instructor-focused teaching model to a new student-centric approach that favors a more personalized, collaborative, anytime-anywhere—from any device—learning experience. As these colleges and universities move forward, what technologies and policies should they have in place to support their academic needs?

Campus Technology spoke with Texas A&M University, South Arkansas Community College, and telecommunications provider Verizon to get insight on how to build an IT infrastructure that supports the ever-changing landscape of 21st century learning.

MEET THE CONTRIBUTORS

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1) Today's students don't want to be tethered—to a device or a classroom. How does virtualization and cloud computing support anytime-anywhere-any-device learning?

CAROL FOX HENRICHS: Today's investments in technology for teaching and learning should be geared toward removing barriers that impede access. That's the same advice I would have given ten years ago—the barriers however, have changed. The explosion of mobile devices has created the latest barrier to access. Students do not want their access to be limited to a specific time, to any one device, or to a specific place. The use of cloud computing and virtualization helps to break down barriers of device and place, while time is more closely tied with course design.

TIM KIRK: Virtualization and cloud computing have increased the tools available to students to learn and can facilitate their adoption of study habits in which previously idle time is now used to complete assignments. This is not an entirely new phenomenon; the idea of a student reading under a tree has been replaced by one that may be reading, composing, or conversing with his or her peers or instructor. This is not to say that all learning can occur via anytime-anywhere-any-device, but rather that students now have compelling tools that permit them to engage in a greater number of academic activities outside of a classroom—especially more conversation with their instructors and peers. Anytime-anywhere learning technologies have not diminished the mentor's role in the education process. New technologies are, instead, facilitating greater student-faculty interaction.

TECHNOLOGY INSIGHT FROM VERIZON: Educators are deploying mobile strategies to enable students to learn on the go and when they are able. This type of dynamic learning environment requires robust support to allow students to be able to access learning apps and data from their mobile devices on-the-go.

Virtualization and cloud computing allow campuses to focus resources on core competencies and evaluate how they can enhance those competencies by sharing resources and optimizing service delivery models to ensure their offerings align to rapidly evolving campus needs.

2) How do you combat the potential threats introduced by such personal devices, while maintaining standards for academic integrity and honesty?

HENRICHS: The issue of who is actually doing the work is still unresolved. Efforts to track the location of logins by IP address are gaining popularity, but following up on possible credential sharing is time intensive. Without an affordable, practical means of identifying students via technology, creative teachers should design assignments that require unique submissions from students--which build on the previous assignment—so they can become familiar with the students and their writing style.

Standards for academic integrity and honesty are independent of the technology or instructional delivery method. Teachers should assume students are collaborating and develop assignments with that in mind. Real-world assessments—those that require application and critical thinking—are often more difficult to develop and grade, but are much better at gauging learning than objective-style exams. Students have been cheating in the face-to-face classroom since the days of the one-room schoolhouse. Attempting to circumvent cheating is frankly, a waste of time. Faculty should instead invest their time in designing engaging learning experiences with authentic assessments and be more concerned about whether true learning occurs rather than whether students can pass an exam.

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KIRK: This question raises several issues: the possible introduction of malware via personal devices and the ability of students to collaborate or use outside resources when the faculty member is expecting independent effort.
To combat the malware threat first requires a philosophical change: You cannot eliminate all of the threats—there will be insecure devices with malware in the campus environment. To reduce the number of infections and their impact, the college has implemented an ongoing program of end-user education, made college-purchased software solutions available to our students and staff, and implemented policies in the network-switch fabric to reduce the impact of malware and its ability to replicate. Our current hardware vendor supports policy implementation at the switch-port level.

The second issue is more interesting in that it requires faculty to embrace a new academic landscape where Google and Wikipedia are always just a few keystrokes away. While mastery of a discipline requires students to know a given set of core facts—just as students using a calculator must still learn how to perform basic math—the availability of entire reference libraries via portable devices permits the academic experience to move beyond the mechanics of a discipline and concentrate upon analysis and interpretation. Thus, assignments can now be focused upon why, and less about who, what, or when. Classroom exercises and assessments that require students to analyze and interpret do yield not only a deeper understanding, but permit faculty members to more accurately assess students' true mastery of the materials. "Open book" exams have long been a valid tool in academia; they just require faculty to ask different questions.

TECHNOLOGY INSIGHT FROM VERIZON: Protecting restricted data and internal network resources from vulnerabilities or breaches is a top priority to support the high-availability needs of the critical applications required on today's campus. Hacking or unauthorized access to data or computing resources are potential security risks that are blatant and intentional; however, data systems or networks can be compromised unintentionally as well.

It is important for schools to establish acceptable use policies for responsible use of technology and provide training, especially in environments where students and staff bring their own devices onto campus. The potential for inappropriate use applies to all campus constituents. Password sharing, storing sensitive information and open applications are just a few examples of common misuse. Caution against policies that are too rigid or restrictive.

The challenge for schools is how to prioritize and manage investments in their resources so they are well-positioned to serve connected students, and their campus security strategy is a key guiding plan.

3) What policies and technologies do campuses need to have in place to protect both their network and users' privacy in today's open, collaborative learning environment?

HENRICHS: Intellectual property and copyright policies are the obvious answers to the question of what types of polices are essential for schools in today's technological environment. Most school IT administrators are also aware of the necessity of scrutinizing the privacy policies of all vendors that host applications to ensure that intellectual property rights are not given to the host.

However, faculty generally need guidance in evaluating and choosing tools for the types of collaborative activities that students find so engaging. Questions abound around the legalities as well as best-practice uses for sites such as Facebook, Blogger, WordPress, Delicious and Google sites. Faculty has the ability to use, and have students use, any site they find—thus helping them make wise choices is essential.

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KIRK: As noted above, network administrators must now assume that compromised devices are present on their network and take steps to lessen their impact. Two examples are restricting direct communication between two wireless devices on an access point, and requiring peer-to-peer traffic to pass through higher-order network electronics, which permits the network administrator to apply policies that lessen the risks of using a wireless network. Once again proactive user education is a must as administrators cannot protect what students give away. Our policies permit our users to use a wide variety of devices on the college network; however every device must authenticate itself (just as students need an ID to borrow material from the library). I encourage network users to assume that, with only a few exceptions, that no communication is truly private. Further, digital data is forever.

TECHNOLOGY INSIGHT FROM VERIZON: In addition to the intellectual property, copyright and other regulations that impact academic engagement on campus, there are other legal and regulatory compliance requirements that impact campus operations. Everything from the Privacy Act to the Payment Card Industry Data Security Standard (PCI DSS) to the Health Insurance Portability and Accountability Act (HIPAA) requires careful risk assessment and implementation of policies and technologies to protect the campus and its constituents, in order to maintain public trust and meet rigorous compliance requirements.

Some technologies for mitigating mobile security risks include device-level encryption, endpoint security solutions, identity and access management, anti-virus/anti-malware and mobile device management.

A combination of carefully constructed policies and procedures, along with daily monitoring at every layer of the network, is required to protect institutional data, identities and applications.

4) What applications are used to create an engaging, social experience for your institution's virtual students? How does the trend of IT computerization/BYOD affect campus IT budgets and planning?

HENRICHS: Many of our colleges use iTunesU to distribute their content. We also support Confluence, a wiki product from Atlassian, Camtasia Relay for lecture capture, and SABA Centra for videoconferencing and synchronous meetings. We are in the process of moving to Blackboard Learn for our centrally supported LMS and plan to make use of the collaborative tools included. There is no denying BYOD is affecting the campus budget for technology. Initial efforts included installing wireless access points in instructional areas, dorms and common gathering areas. More recently, resources are being directed toward providing wireless access as students move from one building to the next. One nice thing about recent trends in computerization is the reduction in space needed for servers, which equates to smaller data centers.

KIRK: South Arkansas Community College has few prototypical virtual students. The nature of our institution and social demographics of our service area have resulted in the majority of our "virtual students" being physically present on campus, at least some of the time (more than 80 percent of students enrolled in an online course last fall were also enrolled in a face-to-face class). They are leveraging our online offerings to accelerate their studies or to obtain a more desirable study schedule, frequently completing coursework in study areas located on campus. The college had maintained a variety of discussion boards where students could interact but Facebook and the other social media sites have long since surpassed those offerings. Sometimes you can build it and they will not come.

The greatest impact that IT consumerization has had upon the IT budget at SouthArk has been to permit us to support an installed technology base larger than one might expect at an institution of our size and

profile. The economic challenges facing our students require that the college continue to deploy a significant number of workstations in direct support of our academic mission.

This is not to say that our students do not BYOD, but that their devices tend to be smartphones. Thus, the second impact upon the IT budget has been a need for us to expand our wireless capacity and acquire greater Internet bandwidth. Where just a few years ago, a couple of wireless dead spots might have been acceptable, our students now expect robust access everywhere on campus. Finally, as students can afford to acquire technology, they turn to the college and the IT support staff to assist them when they encounter difficulties. Phone, tablet, laptop, or home computer—if they use it, we try to assist them.

TECHNOLOGY INSIGHT FROM VERIZON: Many higher educational institutions find themselves operating in a changing environment. Your campus is no longer defined by the boundaries of your institution. Today, you have to connect students, faculty, staff, researchers, alumni, suppliers, remote facilities, the community and global partners. There are social networks, free courses, certificate programs and other eResources readily available that contribute to the ecosystem that provides teaching, learning, research and community engagement for your campus. The ability for students and faculty to interact with each other virtually via learning management systems is an engaging way to collaborate.

Why is the bring-your-own-device (BYOD) movement such a hot topic in education right now? For many, budget is the driving factor. Schools know that technology is a critical learning tool, but tight budgets are crimping their ability to refresh enterprise technology affordably or on a cycle that is frequent enough to take advantage of the latest computing capabilities. Schools also know that technology engages students in learning, promotes digital citizenship and fosters 21st-century skills. The power of apps and the portability of mobile devices combine for creative learning environments.

5) What's the one piece of advice you would give to a fellow technology director who is still in the beginning stages of planning for anytime-anywhere learning?

HENRICHS: Include all of your stakeholders in the planning. Make sure you get input from those who will use your services. Too often IT gets input from the IT perspective only, resulting in solutions that don't meet user needs.

KIRK: Technology alone cannot create an engaging learning experience; that begins with an engaged faculty member. There is no one device for all students in all situations. Moreover, students will use technology in unforeseen ways. If we are fortunate, the devices that we use five years from now will be cooler than we can imagine today. Of course, you can never have enough bandwidth for a college network. And finally, remember that educating your users is a far better approach than attempting to control them.

TECHNOLOGY INSIGHT FROM VERIZON: With continued advancement in technology, higher-education institutions are only limited by imagination and organizational will. But, there is a need for campus-wide strategic planning, governance and prioritization to move to new technology platforms that optimize the education ecosystem. Anytime-anywhere learning enables students to take learning to the next level only when planned well. The planning process needs to take into account any inherent limitations of existing infrastructure at the initial stage to help properly support anytime-anywhere learning.

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ABOUT CAMPUS TECHNOLOGY

Campus Technology is one of higher education's top information sources—delivering valuable information via a monthly magazine, website, newsletters, webinars, online tools and in-person events. It's the go-to resource for campus professionals—providing in-depth coverage on the technologies and implementations influencing colleges and universities across the nation. You'll discover valuable how-to content, best practices, industry trends, expert advice and insightful articles to help administrators, campus executives, technologists and educators plan, develop and successfully launch effective IT initiatives. Our annual conferences showcase expert speakers, thought leaders and technology solution experts exchanging ideas on the latest technological innovations in use on campuses worldwide—offering campus technology professionals opportunities to collaborate, network and gain valuable information that helps them succeed.

Launched in October 2004, *Campus Technology* magazine replaced the highly respected Syllabus publication, a recognized leader in the coverage of technology on campus since 1988. Campus Technology continues to uphold Syllabus' mission of serving as a complete resource for academic and administrative IT leaders in higher education—establishing a collaborative environment that promotes professional networking and global pedagogy.

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