



Foundation for the Future

Building a platform for safe, secure and engaging learning environments

The classroom has changed forever, as educators are charged with supporting students who are learning in person, at home and in other remote locations — often all at once.

The challenge for today's institutions — both in K-12 and higher education — is to ensure that technology enables engaging hybrid environments while protecting students' physical and virtual safety. New networking technologies provide opportunities to build a platform that can support all students and staff, whether they are on site or online.

"New approaches will be critical as we create a foundation for the future of learning," says Jim Jorstad, a Center for Digital Education senior fellow and former director of IT client services at the University of Wisconsin-La Crosse.

A DIFFERENT LANDSCAPE

An evolving learning environment — where many students have returned to classrooms, some continue to learn remotely and almost all spend more of their school day on a computing device — poses new challenges for K-12 and higher education leaders moving forward.

One critical concern is addressing physical and online security threats to minimize learning disruptions and protect personal information.

An estimated \$3 billion was spent on school security in 2019, Jorstad says. Access control systems in buildings are almost universal, with more than 90% of K-12 public schools using security cameras during the 2019-20 school year, according to the Pew Research Center.¹ At the same time, education leaders have battled a rash of ransomware attacks that cost U.S. schools and colleges \$3.56 billion in 2021, a recent Comparitech survey found.²

Another key precept is ensuring all students have a quality learning experience. The number of connected devices and applications used by students has exploded, and schools and colleges are struggling to support these expanding technology requirements.

"Over the past couple of years, there's been a huge transformation and the need to bring more devices into the environment," says Scott Pohlman, Lumen higher education business development director. "But it needs to be consistent — to make everything work in the same way and make it easier to manage."

THE PLATFORM APPROACH

Cloud-based networking technologies open the door to address these needs, simplifying security management and eliminating physical hardware that

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internal staff must maintain. Cloud-based networks can also automatically scale up or down based on traffic, time of day and events, using sophisticated traffic shaping to prioritize bandwidth for streaming video for remote learners and other critical needs.

"Cloud-based networking helps institutions and school districts consume technology on a broader and more cost-effective scale," says Joey LeMonier, sales leader service provider, Americas for Meraki.

To fully take advantage of cloud-based networks, schools and institutions must think of these solutions as a platform that can seamlessly add new technologies and services as needs emerge. Here are some best practices for adopting this approach:

Plug and play. Identify the devices and services that address the most critical

needs of schools, campuses and students as part of technology assessments. Among the potential use cases:

■ Smart cameras and related services.

Shifting from analog to digital cameras improves image resolution and simplifies device management. It also allows both classroom and security recordings to be saved in the cloud. Smart cameras enable additional capabilities, including people-counting technology to track occupancy in shared spaces like libraries, labs and dining areas. They can also automatically identify whether everyone is wearing a mask if guidelines require them, identify firearms and automatically alert staff to lock down a building, and determine if spaces have been cleaned in keeping with public health guidelines.

■ Sensors for environmental monitoring.

Monitoring air quality, ventilation and lighting has been shown to have an impact on how well students learn. Schools and institutions can prevent environmental issues with remote visibility and real-time alerts.

■ Emergency management and notifications.

These functions include secure access and remote entry control, visitor management systems, and automated notifications and alerts.

■ Analytics to monitor movement around buildings and campuses.

This technology provides insights on overall facilities usage to inform budgets and staffing. It also supplies proactive information about students who may not be attending classes or participating in study sessions.

■ Identity and access management.

These tools present a single secure approach to access classes, learning management systems and employee systems whether individuals are on campus or using services remotely.

Once appropriate use cases are identified, ensure that specific solutions can connect seamlessly to the network. "One advantage of cloud-based networks is they scale up as use cases grow," says Omar Foster, senior account manager for Lumen's state, local and education organization.

Focus on partnerships.

Cloud-based platforms represent a solution to the growing complexity of creating smart learning environments in schools and higher education. But institutions can't create and manage them alone.

"Adopting a platform approach is a journey," says LeMonier. "To do it quickly and effectively, you have to partner."

One key practice, says Pohlman, is finding partners who can assemble technologies — hardware and applications — from multiple providers to customize and integrate solutions for specific needs. "Look for an organization that has a large number of partnerships in its own portfolio," he says.

Develop a governance structure.

Managing systems and partners requires an effective governance structure. Begin by identifying stakeholders — from procurement and IT staff through end users. Next, understand how partners will respond to issues or problems. "You need to know who to call first when something goes wrong," Pohlman says.

It's also important to choose vendors with services and structures that are tailored to the needs of schools and higher education. "Look for providers that

understand how you operate your school, district or institution so they can customize their program management around you," says Tina Telson, director of platform adoption for Lumen Technologies.

Leverage funding opportunities.

Along with tapping into remaining funds from COVID-related federal stimulus programs, consider other grant opportunities that focus on meeting technology needs, improving student outcomes and strengthening security.

THE POWER OF SIMPLICITY

The ultimate goal of a platform strategy is to make it easier for schools and institutions to adopt and manage best-of-breed tools and technologies that drive better learning outcomes and ensure student and campus safety.

The potential of cloud-based platform approaches is just beginning to be realized. "Only a small percentage of cloud migration has happened to date," says LeMonier. "We are just getting warmed up."

As platforms proliferate, new technologies driven by the growth of Internet of Things devices will enable new capabilities, greater automation and more flexibility within smart learning spaces. To be ready for these advancements, schools and institutions must forge partnerships that will help them to create environments to sustain, engage and secure education in the years to come.

"Simplicity is the future," LeMonier says. "Technology is complicated. The simpler we can make it, the more consumable it becomes."

This piece was developed and written by the Center for Digital Education Content Studio, with information and input from Lumen and Cisco.

¹<https://www.pewresearch.org/fact-tank/2022/07/27/u-s-school-security-procedures-have-become-more-widespread-in-recent-years-but-are-still-unevenly-adopted/#:~:text=59%25%20o-%20elementary%20schools%20and,to%20report%20using%20security%20cameras>

²<https://www.comparitech.com/blog/information-security/school-ransomware-attacks/>



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