Corporations have touted the benefits of the cloud for ages, but it’s finally taking hold in K-12. Although adoption may be slow, it’s steady and will only continue to grow as schools and classrooms become increasingly digital. The wide availability of cloud-based resources and applications is enabling more and more schools to go BYOD and introduce mobile devices in the classroom. The move to mobile has redefined how we think about education and how it’s delivered. This article takes a look at the cloud as it stands today, the benefits and challenges to its adoption and what K-12 tech managers can expect in the future.
AGILITY. ELASTICITY. Low capital expenditures. The general business benefits of cloud computing are touted so often by service providers, vendors and analysts, that it can be difficult to get a real feel for the cloud’s practical implications in any one vertical. Such is the case for K-12. But upon taking a closer look at cloud adoption rates and trends, the specific benefits to deploying cloud services in education become apparent, not only for the business benefits but for the future of education.

Cloud adoption on the rise in K-12
While cloud adoption in K-12 may not be widespread today. That is likely to change over the next four to five years.

“CDW-G knows from its own research that less than half of K-12 organizations are delivering IT services either totally or partially via cloud computing,” says Tim Murphy, cloud client executive, Education, CDW. However, according to the solution provider’s 2013 State of the Cloud Report, that number will increase. K-12 IT pros expect to spend 25 percent of their budget on cloud computing in one year. In four years that number jumps to 35 percent.

That trend is being reported across the industry. The New Media Consortium’s NMC Horizon Report 2014 K-12 Edition also indicates an increase in the cloud’s adoption. The report identifies cloud computing as a mid-term technology, meaning that it will achieve widespread adoption in two-to-three years.

“[Schools are] being strategic about it. It’s about enhancing or revamping IT budgets,” says Samantha Becker, senior director of Communications and director of NMC Horizon Project for The New Media Consortium, an international community of experts in educational technology. “I talk to schools that are taking a year or two to decide which cloud platform to adopt. They have a pilot to test it out, evaluate it and then either move on or fully integrate it."

Cloud services come in a variety of flavors, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). The majority of deployments in K-12 are SaaS solutions.

“In K-12, the top use of cloud is productivity suites – Google Apps for Education and Office 365,” says Murphy. Both Microsoft and Google recently announced unlimited storage, relieving districts of the massive storage requirements associated with digital student portfolios."

An added benefit of cloud-based productivity suites is that they enable the type of collaborative learning promoted by Common Core.
Cloud adoption drivers and benefits

Cloud adoption in K-12 is driven, in part, by the benefits it delivers.

“In K-12, cloud is about helping schools get back to their core mission – educating students. Cloud helps districts do that by taking a very expensive and cumbersome project, an infrastructure upgrade for example, and changing it from a capital expenditure to an operating expenditure,” Murphy says.

Avni Rambhia, digital media industry manager, Frost & Sullivan, explains further: “Educational institutions are typically resource-constrained, and the cloud-based option takes the headache and responsibility of installing, maintaining and troubleshooting systems away from district IT and towards the vendor. This works out to a more reliable platform with lower total cost of ownership.”

Cloud adoption is also driven by other technological and pedagogical trends in education, like bring your own device (BYOD) programs. Many districts are now setting up school-based infrastructures that allow students to use personal devices from home to access classroom resources and apps in the cloud. This is a cost-effective way to increase productivity and collaboration in the classroom. The proliferation of mobile devices and the growing adoption of the cloud have also spurred changes in the way we view teaching and learning.

“A lot of educators and administrators are rethinking how schools work, like whether or not the classroom has to have four walls,” says Becker. “Being able to access resources and participate through the cloud allows more flexibility during the school day and continuous learning outside of the classroom.”

Matthew Lynch, dean of the School of Education, Psychology, and Interdisciplinary Studies, and an associate professor of Education at Virginia Union University, agrees. “One of the benefits of using cloud in K-12 is access to information. We’re moving more and more into the future of learning and self-organized learning where teachers and students need access to information almost immediately, or to share in an instant.”

Disadvantages and concerns regarding cloud

While the cloud certainly has a number of benefits for K-12, it does raise concern particularly around issues of student data and privacy.

“There are some lingering concerns regarding security, availability and lock-in, as we see in any situation where the cloud is being considered, says Rambhia. “However, there is growing awareness that with a judiciously chosen partner, the cloud can deliver more benefits than an on-premises solution.”

Rambhia advises school districts to look for cloud computing provid-
ers that are well funded, demonstrate a long term commitment to the cloud business and have backup processes in place.

Schools can also beef up cloud security with third-party security solutions. “For example, companies such as Google have pledged to keep students’ data secure. These companies have made it their top priority to be compliant and manage security for districts,” says Murphy. “Districts can also work with a number of independent software vendors that provide additional security on top of what the largest vendors are already doing for their K-12 customers.”

Training also plays a large role in the successful adoption of cloud computing. While younger teachers are likely to use cloud-based technologies in their everyday lives, older teachers may be more hesitant. There is a need for training to teach educators the benefits of cloud platforms and how to use them.

“Cloud computing, in many cases, is an infrastructure overhaul,” says Becker. “It does require strategic planning and it does require visionary leadership in combination with good policy around it and being able to train the teachers to help them see the value in it, understand how to use it and integrate it into their current pedagogy.”

The future of cloud computing in K-12

Despite these concerns, experts agree that cloud adoption will continue to grow in K-12.

“One of the things we hear from customers, both academic and IT departments, is that they wish they had moved to the cloud sooner,” says Murphy. Customers say it’s easier to manage and allows them to focus their attention on educating students rather than managing technology.

When asked about the future of cloud computing in K-12, Becker quotes American-Canadian writer William Gibson: “The future is already here – it’s just not very evenly distributed.”

“I think that perfectly sums up cloud computing,” she says. “The cloud is expanding access and helping to make sure that people in all areas can have access to quality education. We’re seeing the rise of online courses, and online learning platforms are becoming equalizers. None of that is possible without the cloud. It’s only going to grow in importance.”