Accelerating IT Change in K-12

Factors and goals driving rapid change in
modern educational infrastructure

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→ INTRODUCTION

From administrative tasks to teaching and learning, schools rely on information technology for more services every day. While modernization is a constant in any technology environment, the demand for modernization in education has accelerated with increasing needs for security, performance, and anytime, anywhere content delivery.

Modernization of current infrastructure for K-12 institutions means improving the IT experience for both students and staff, resulting in increased productivity and satisfaction—and a more engaging, more authentic learning experience for students. IT decision makers in education are working to build environments tuned to spark success, regardless of where students learn, or from where instructors are teaching.

The unique challenges of information technology in K-12 education include meeting the needs of many stakeholders—students, teachers and administrators—while operating within limited budgets. IT staff working in K-12 school districts are expected to provide reliable, safe, and equitable access to students across a range of income levels and home environments, including areas without widespread wireless networking.

These schools must also meet regulatory demands concerning availability, security and privacy. This means continually evaluating and updating their systems to account for cost, standards compliance, accessibility, and overall performance.

Spiceworks recently conducted a survey of K-12 IT decision makers, with respondents spanning many roles, from CTOs to administrators. Based on that survey, this eBook explores how educational organizations select, purchase and manage IT, with special emphasis on the specific challenges of K-12 education. We also examine technology refresh cycles, including their security considerations and impact on productivity.

IN THEIR OWN WORDS: WHAT EDUCATION IT DECISION MAKERS ARE STRIVING FOR

"Keeping in line with current best practices, always working towards more resiliency and re-evaluating what our current needs and goals are and how to satisfy those."

"To refresh our backend infrastructure to maintain the needs for our users in both access and application requirements."

"It is important that a vendor protect our students online and that the program is user friendly for our staff."

K-12 IT infrastructure in 2020

Primary and secondary education, once dominated by in-person instruction provided by teachers to students in the classroom, has moved increasingly to blended learning environments, where technology enables educators to more easily shift to learner-centered instructional models. Students today are able to access information from a wide range of online sources for student-led learning.

This trend has only accelerated in recent days, with a huge number of students attending class from home either part-time or permanently. Many educators and administrators are also working remotely, while continuing to seek meaningful, personal interactions with the students they serve.

Institutions' IT decision makers are faced with a difficult task: they must advance learning and working from anywhere, in addition to fulfilling the demands for data storage, security and privacy protection. And they must do so in a way that ensures equity across all student populations.

Survey respondents named three IT challenges that stood above the rest: meeting end-user needs (42%), dealing with limited IT staff and resources (40%), and doing their jobs with limited budgets and high costs (35%). While not the only challenges facing K-12 IT pros, these limiting factors push other needs such as conducting security audits or training staff further down the stack.
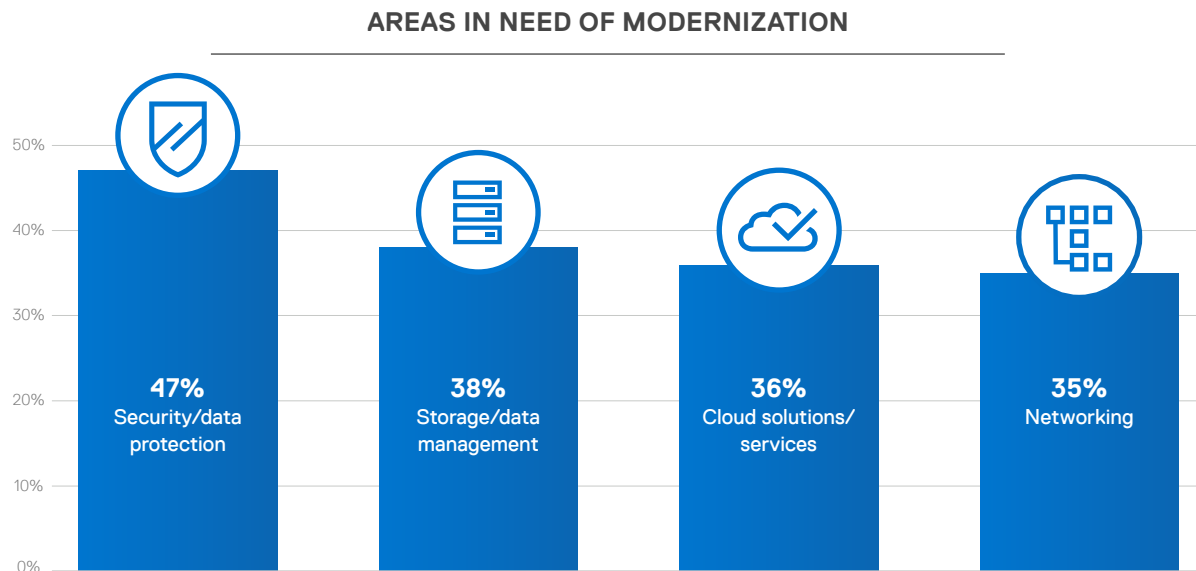
CHAPTER 2:

Objectives of IT modernization in K-12

To meet the growing list of technology challenges, IT decision makers working in K-12 must constantly weigh the relative importance of the services they're expected to deliver against the tools they have to use, and how much these tools cost.
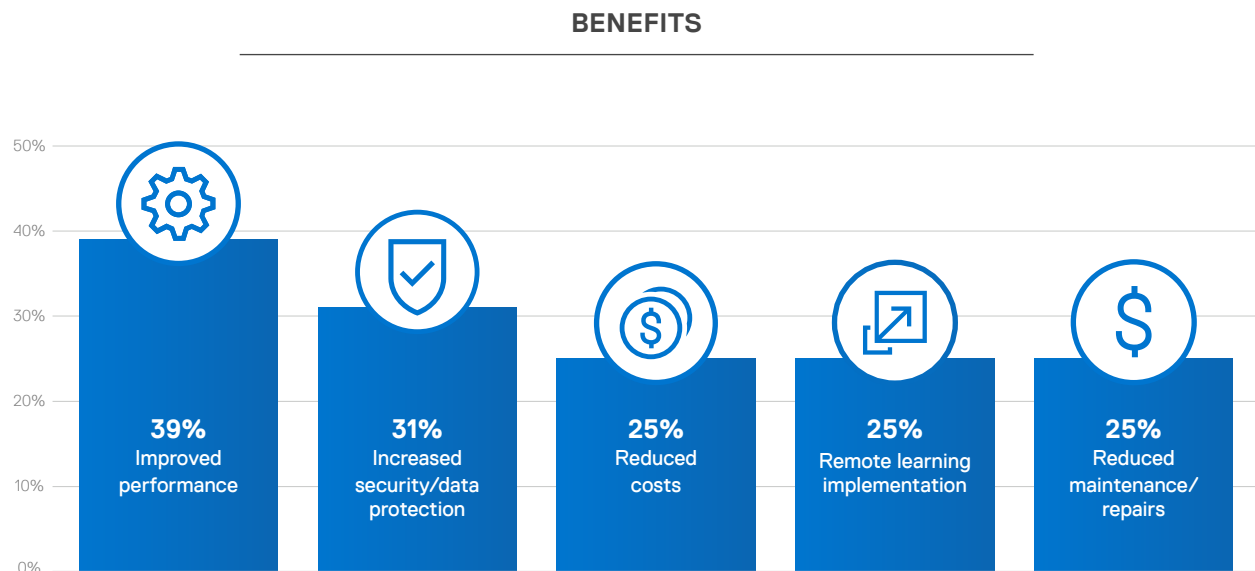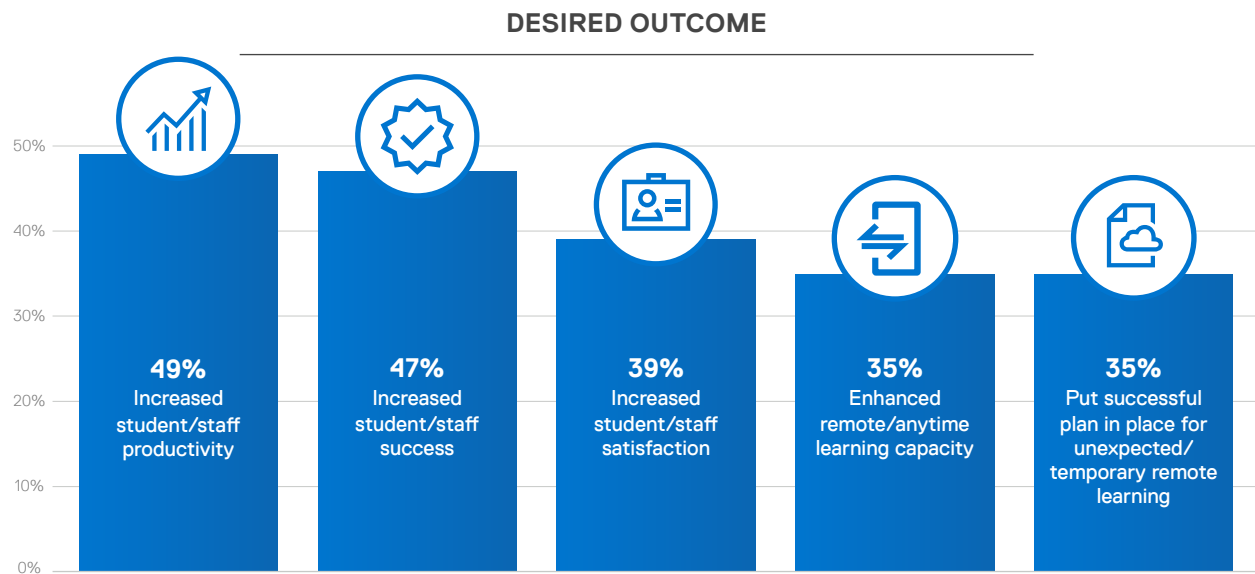
Four areas top the objectives of K-12 IT decision makers looking to modernize their institutions:

AREAS IN NEED OF MODERNIZATION

47% Security/data protection	**38%** Storage/data management	**36%** Cloud solutions/ services	**35%** Networking

Security and data protection understandably lead the list, as expressed by 47% of respondents. This is because educational institutions host a range of personally identifiable information about both staff and students. Student data is particularly sensitive; identity thieves know that students' Social Security numbers and other identifiers may be used for years before any fraud is discovered. Employee information and data belonging to students' families, however, are also subject to interception or compromise.

School networks also make a tempting target for malware creators, including ransomware, which can leave a school or district's data at risk of destruction if allowed to infect the system.
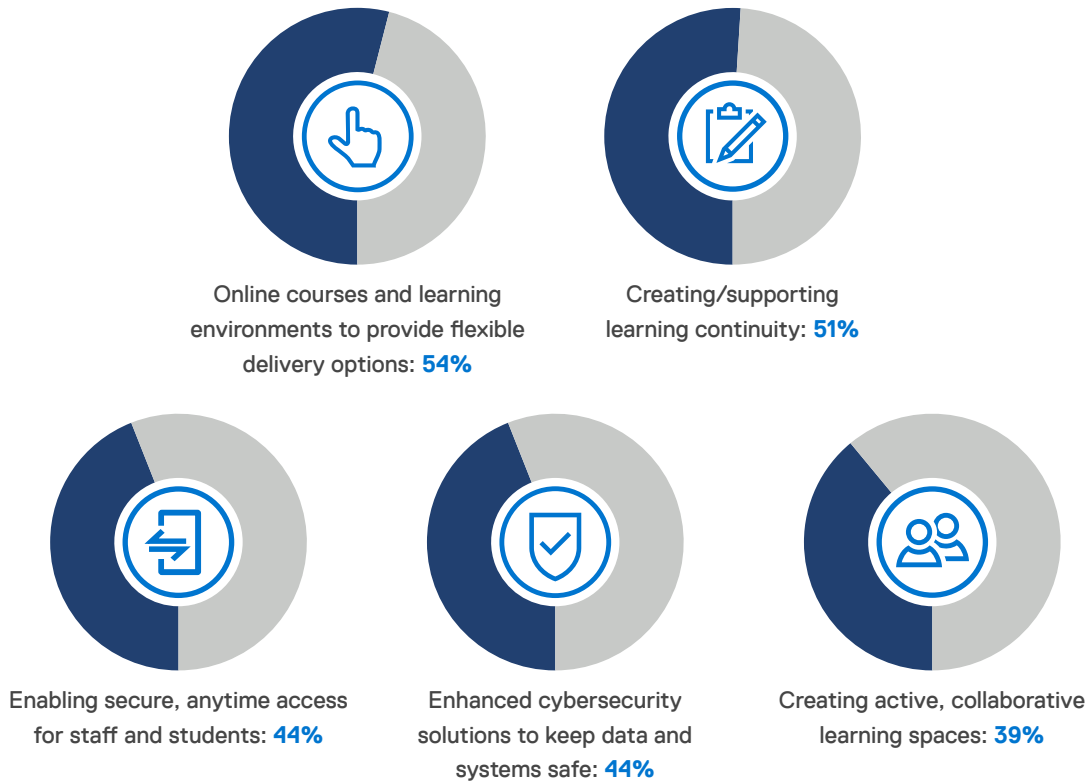
And because K-12 students are minors, school IT environments require content filters that block inappropriate material. Such filters reduce students' exposure to potentially harmful material, and are mandated by E-rate rules that govern certain Federal funds vital to paying for school IT systems.

DESIRED OUTCOME

49% Increased student/staff productivity	**47%** Increased student/staff success	**39%** Increased student/staff satisfaction	**35%** Enhanced remote/anytime learning capacity	**35%** Put successful plan in place for unexpected/ temporary remote learning

BENEFITS

39% Improved performance	**31%** Increased security/data protection	**25%** Reduced costs	**25%** Remote learning implementation	**25%** Reduced maintenance/ repairs

From exams to grade reports to student work portfolios, institutional and personal content of all kinds increasingly originates as digital objects. Legacy data is captured and stored digitally to improve storage, searchability, and management. Workflows that rely on that data are key to both student and employee productivity. It's no surprise that 38% of respondents report that storage and data management is an area that urgently needs modernization. Speed, reliability, cost and scalability all count on modernization. Storage-related functions and legacy compatibility are particularly important factors.

DESIRED INITIATIVES ACHIEVED

Online courses and learning environments to provide flexible delivery options: **54%**

Creating/supporting learning continuity: **51%**

Enabling secure, anytime access for staff and students: **44%**

Enhanced cybersecurity solutions to keep data and systems safe: **44%**

Creating active, collaborative learning spaces: **39%**

K-12 IT managers need to address increasingly distributed school environments. Respondents made it clear that K-12 modernization would need to support online courses and learning initiatives (named by 54% as a desired initiative), and support learning continuity (51%) in the face of prolonged school closure or absence from campus. IT decision makers also favor modernization to enable secure, anytime access for all network users (44%) and active, collaborative learning spaces (39%).

REMOTE/ONLINE LEARNING CHALLENGES

- Internet access
- Lack of participation/collaboration
- Setting up technology efficiently
- Training staff/students on technology
- Security (data and cloud security)
- Shift in how educational materials are assigned/presented
- Troubleshooting technical issues
- Lack of end-user knowledge of best practices
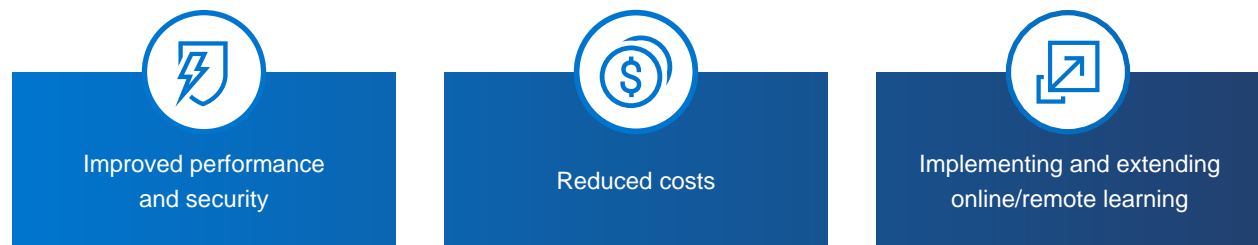- Lack of remote learning platforms/tools

The K-12 modernization journey

IT modernization in education is an ongoing process driven by multiple factors, from annual budgets to emergent security needs. There is no static end point. Instead, IT decision makers must plan on how they can respond to a range of continually evolving challenges.

The parts of an IT environment do not always advance in lockstep. From storage to available bandwidth to security, any aspect of an institution's IT infrastructure fits somewhere on a spectrum. The modernization journey is the process by which each element of IT infrastructure, and the infrastructure as a whole, is evaluated and upgraded to match current and future needs.

IT decision makers noted three key initiatives as the greatest benefits to modernization, specifically:

| Improved performance and security	Reduced costs	Implementing and extending online/remote learning

REFRESHING TECHNOLOGY: AN ONGOING PROCESS

Institutions typically refresh their IT infrastructure every 1–4 years. Many IT managers in education will use some type of consulting service. Decision makers turn to industry experts and peers, as well as vendor websites to learn about new infrastructure solutions.
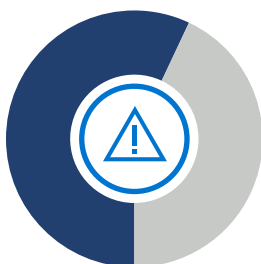
Use of modernization
consulting/services: **75%**

TYPICAL REFRESH CYCLE

26%

5%

5%

63%

◆ Every 1–4 years ◆ No schedule
◆ Every 5+ years ◼ Every year
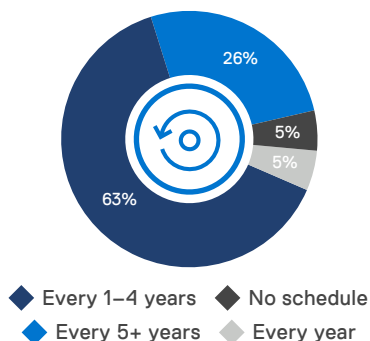
Not surprisingly, the leading triggers for infrastructure modernization efforts are end-user needs (cited by 57% of respondents) and budget availability (56%), because every change is dependent on having the funds available.
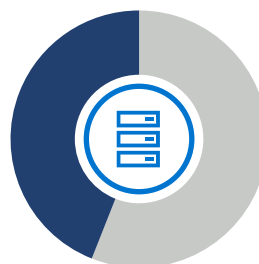
MODERNIZATION DRIVERS

End-users
needs: **57%**

Budget
availability: **56%**

Technology refresh/
modernization: **44%**

IN THEIR OWN WORDS: WHAT MODERNIZATION MEANS TO IT DECISION MAKERS IN EDUCATION

"New laptops for students and teachers, and more bandwidth, as the budget allows."

"Providing adequate learning systems that meet our students' educational needs and future trends."

"Getting the latest releases we can to run and integrate with other apps we have, and also trying to stay proactive rather than reactive."

Challenges and barriers to K-12 modernization

Tight budgets, limited staffing and a learning curve made steeper by a growing list of end-user needs are the top challenges currently faced by K-12 institutions as they modernize. Budgets and costs were cited by more than half (51%) of respondents as a barrier to modernization efforts. IT funds are especially vulnerable to uncertainty when emergency spending takes over a higher share of a school's budget.

BARRIERS TO MODERNIZATION
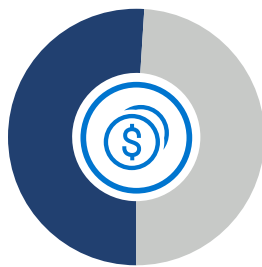
High costs/limited budgets: **51%**

Limited IT staff/resources: **36%**

Learning curve of new technologies: **35%**

Last-mile networking is another persistent challenge, and one that IT decision makers may have limited ability to address. K-12 student access is complicated by uneven network capabilities, particularly to students' homes, and between and within school districts. Many students do not have internet connections consistent and fast enough to support large amounts of data, especially of the kind used in remote learning.

IN THEIR OWN WORDS: K-12 DECISION MAKERS ON THE CHALLENGES THEY FACE

"Keeping in line with current best practices, always working towards more resiliency and re-evaluating what our current needs and goals are and how to satisfy those."

"One challenge is making remote online learning available to all students equally regardless of socioeconomic circumstance."

"We are doing national searches to find qualified IT professionals to meet our needs."

IT decision makers in education must consider infrastructure changes carefully. The true costs of infrastructure include the time and energy spent in set-up, troubleshooting, and support for any particular system. Another large cost to consider is the potential for security breaches, which may expose the institution to data loss or legal liability.

In making modernization decisions, our respondents reported that they relied on a range of information sources that include consultants (39% of respondents), recommendations from peers or colleagues (38%), information gleaned from manufacturer or vendor websites (38%), and data found in online technology communities (35%).

IN THEIR OWN WORDS: K-12 DECISION MAKERS ON THE CHALLENGES THEY FACE

"We want our provider to understand our educational needs and how we need to interact with students, parents and teachers."

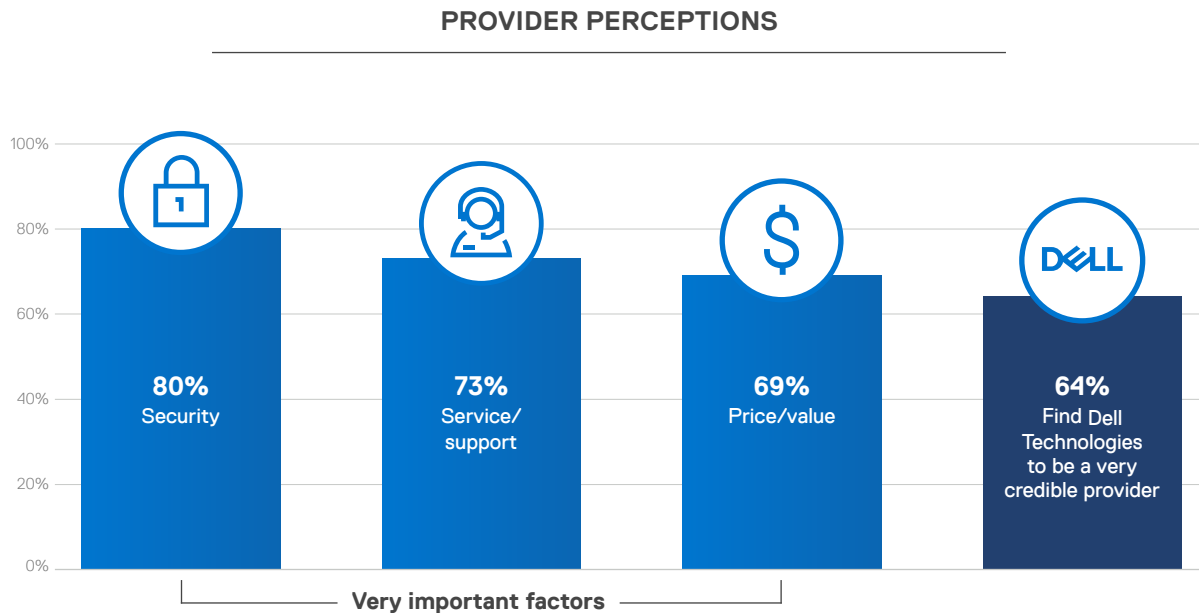"One key factor is identifying flaws, securing breaches, and being aware of solutions with their product."

"We always look into track record based on referrals from other education institutions."

"Ultimately, we want to work with a vendor that keeps our staff's and students' best interests at heart."

🏠 CONCLUSION

To achieve the ambitious IT goals of K-12 education, your IT team will need help from experienced providers with the tools, services and solutions that can span their entire infrastructure, from networking to security to supporting remote learning environments. This is especially important when considering the rapid shifts of technology demands on schools that occurred in 2020, and may last or be expanded upon in the coming years.

PROVIDER PERCEPTIONS

80% Security	**73%** Service/ support
69% Price/value	**64%** Find Dell Technologies to be a very credible provider

Very important factors

While providers all bring a mix of capabilities, education IT pros expect a vendor to excel in service and support (73%), overall price/value (69%) and especially security (80%). Dell Technologies ranks well among respondents in education IT on price/value and support, and is backed by security advantages that come with their integrated, proactive approach to security.

IN THEIR OWN WORDS: HOW EDUCATION DECISION MAKERS SEE DELL TECHNOLOGIES

"[Dell Technologies has] a proven track record and provides an all-in-one solution. We have used their services and products for 20 years."

"Dell Technologies provide end-to-end solutions that work well and are reasonably priced for us. They have consulting services that help us build what we need, no more and no less."

"Their support is outstanding—and that's huge for us. Also, our account team is rock-solid, gives us consistently good pricing and outstanding implementation support, too."

Dell Technologies has extensive experience working with educational institutions of all sizes to help modernize their IT infrastructure and meet their data needs in a cost-effective manner—delivering greater efficiency, predictability, and organizational agility. Additionally, Dell Technologies Services offers long-term support to simplify your IT, starting with real-time infrastructure deployment.

Ready to explore how Dell Technologies can help modernize your environment to help bring students, teachers and staff together?

Learn More

Intel solutions for education

Intel's comprehensive approach to education technology gives educators access to digital tools, content, and data that takes personalized learning to the next level. It enables students to hone 21st-century skills to better prepare for careers in the modern workforce while giving teachers the ability to tailor lessons and engage students. Learn more about Intel's focus on education

VMware solutions for education

To accelerate transformation in education, Dell Technologies and VMware partner together to provide integrated support, co-engineered technologies, and turnkey solutions to increase productivity and reduce total cost of ownership (TCO), enabling K-12 and Higher Education organizations to deliver digital learning experiences, simplify IT management, and secure data in all locations. Learn more about VMware's focus on education

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About the survey

Dell Technologies commissioned Spiceworks Ziff Davis to conduct a survey in April-May, 2020. This survey targeted 153 IT professionals and business decision makers in diverse educational organizations, including both K-12 and higher education. Respondents included IT directors/managers, network/systems administrators, school officials and others who influence IT infrastructure decisions in organizations of all sizes. The objective of the survey was to gain insight into the challenges in educational organizations' infrastructure, perceptions, and practices around IT infrastructure, as well as future plans. Survey results reflect responses from 72 respondents in K-12 education, all located in the U.S.