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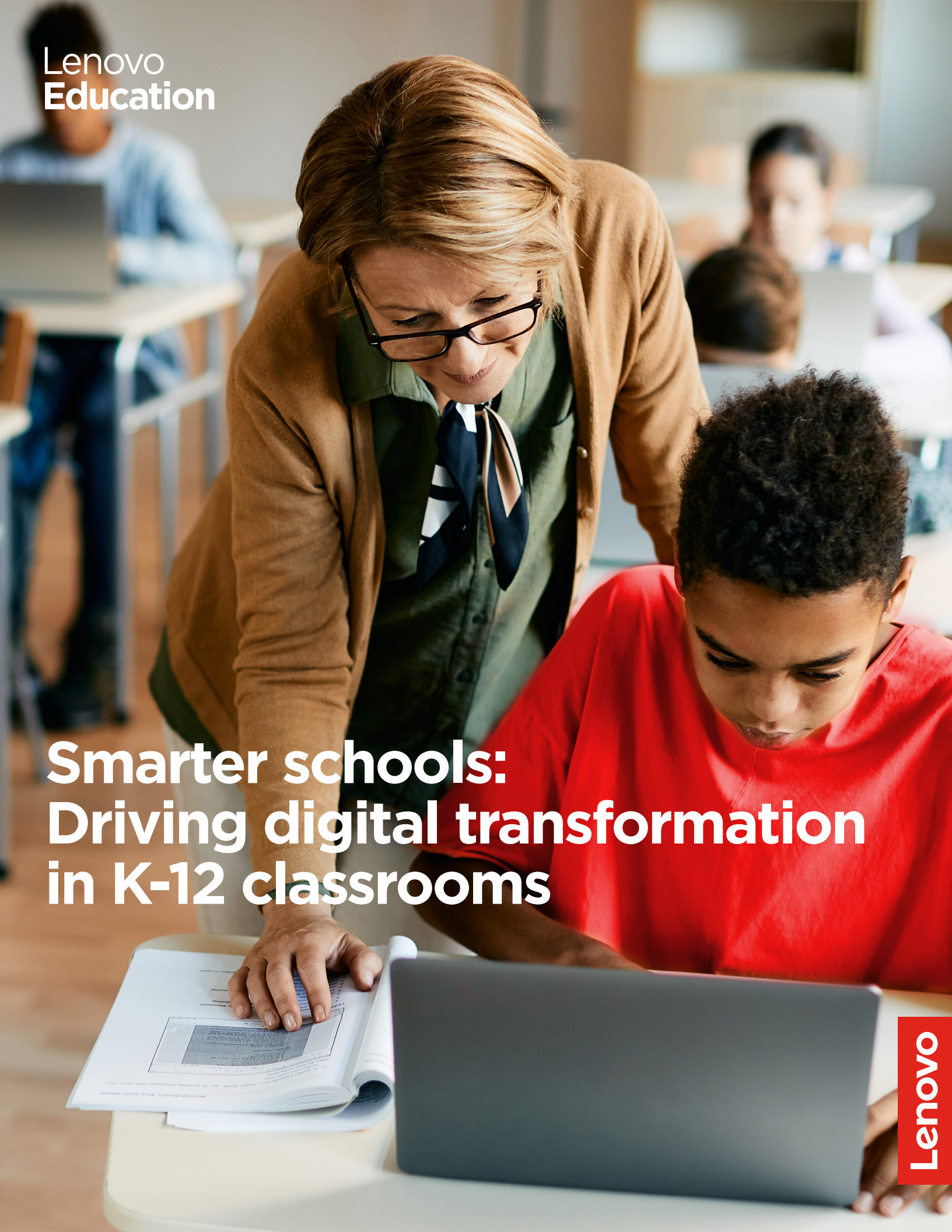
Education



Smarter schools: Driving digital transformation in K-12 classrooms

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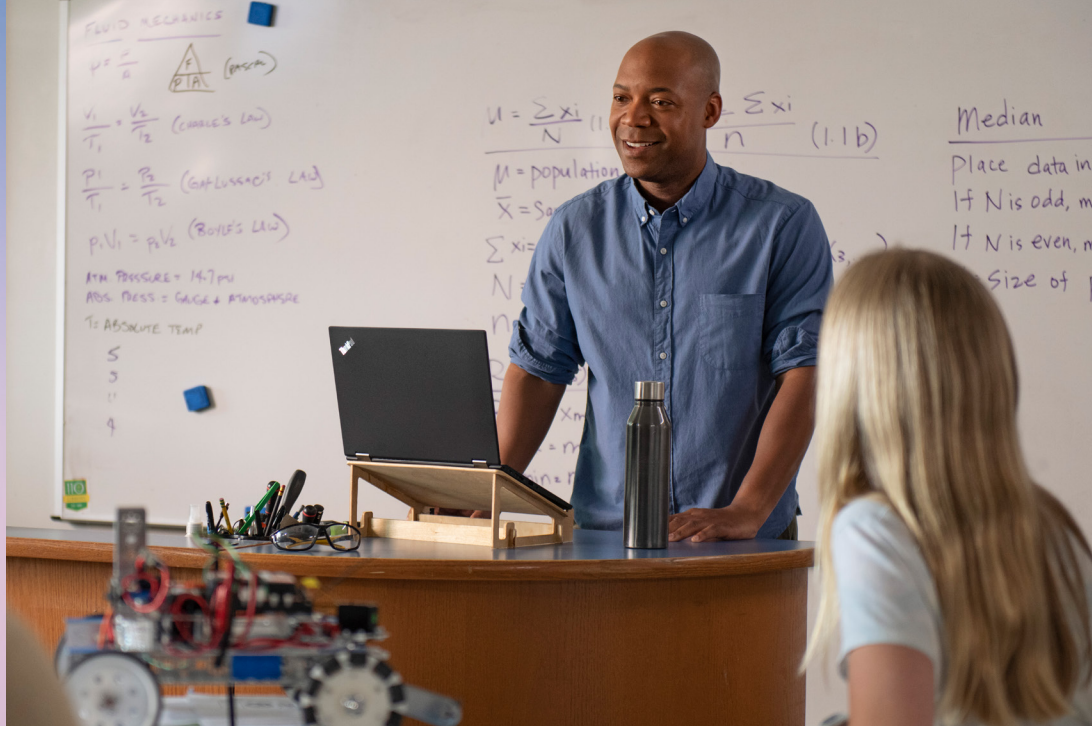

Endless possibilities with digital transformation

Digital technology has been utilized in the classroom since the introduction of overhead projectors in the 1960s, however it played a small supporting role until the rise of e-learning and Learning Management Systems (LMS) in the early 2000s. Over the last twenty years, the use of edtech in the classroom has steadily increased with the Covid-19 pandemic further accelerating digital transformation in schools around the world.

Today, there is a broad consensus that schools need a proactive, holistic digital transformation strategy to create efficiencies, facilitate new learning opportunities, maintain the safety of students and data, and provide cost savings. A digital transformation strategy helps deliver richer education environments to students and a more seamless daily experience to faculty and staff.

Undertaking a full transformation can be daunting, resulting in schools taking a piecemeal approach. In this ebook, we will cover what you need to know to build and lead your school or district's digital transformation strategy, including:

- Effects of digital transformation on faculty, staff, and other stakeholders
- Steps for creating a good digital transformation strategy
- Infrastructure you will need to support your transformation
- The importance of having a trusted technology partner

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What is digital transformation?

Digital transformation is the adoption of new processes that leverage digital technologies to achieve greater efficiencies and expand growth opportunities across the school organization.

For schools, digital transformation means not only implementing 1:1 or shared device programs, but updating curricula, software, communications, and policies to support digital learning and administrative tasks.

Before the pandemic, digital transformation was a long-term goal for administrators but many schools were not able to prioritize spending on the infrastructure needed to support a full strategy. When Covid-19 forced school closures, the need for distance learning pushed schools into making edtech decisions they may have otherwise deferred.

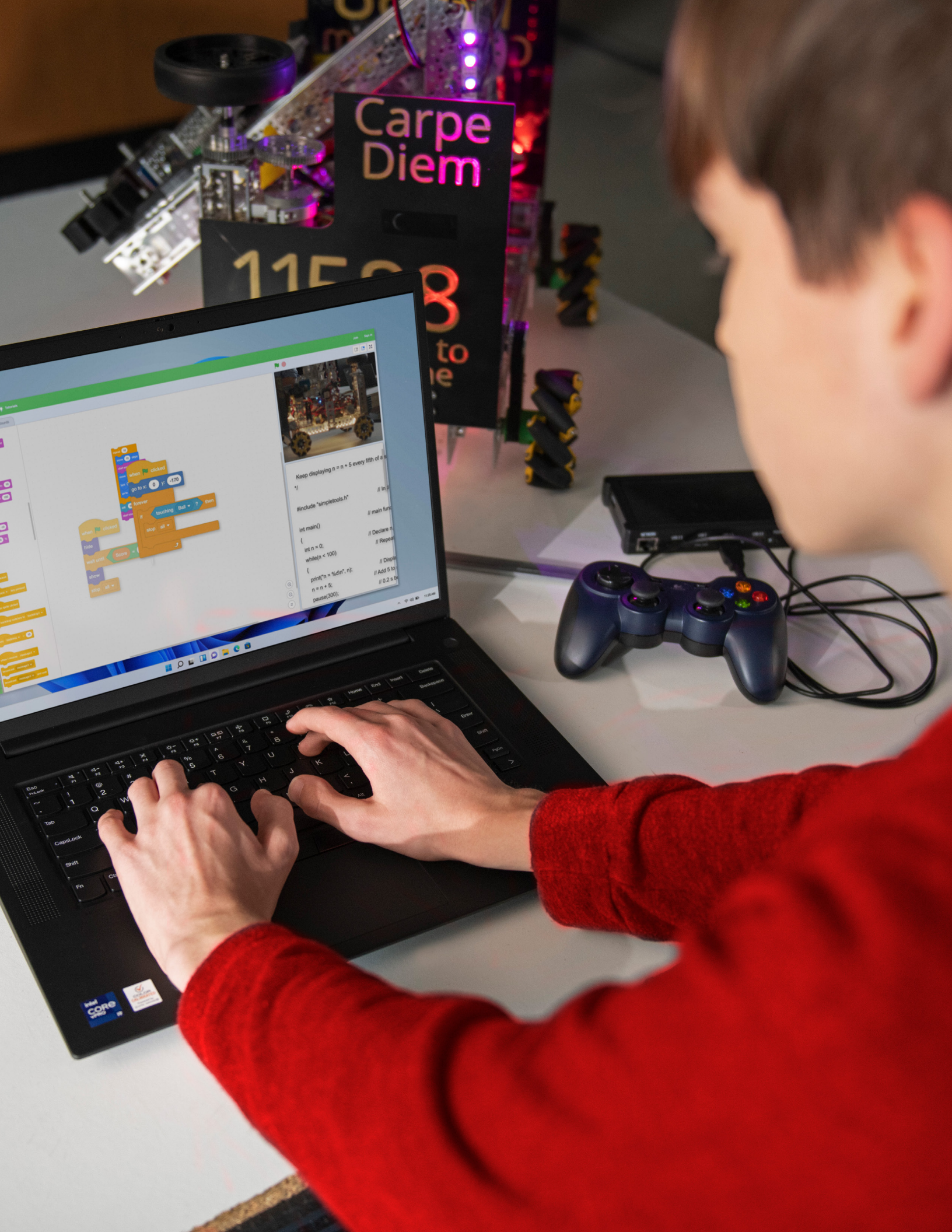
Educators told EdWeek that, before spring 2020, about 66% of schools had 1:1 programs for middle and high school students, while only 42% of elementary schools had the same programs in place. By March 2021, 90% of schools had 1:1 programs for middle and high schools, and 84% had them for elementary schools.

The same is true across industries — it's estimated the pandemic accelerated the adoption of digital technology by several years, making it even more important for students to learn the basics of digital device use before they enter the workforce.

Even though educators know technology is important – and are rapidly incorporating it into schools and classrooms – many districts don't have official strategies in place to make their tech implementation successful. While 51% of schools say technology is a priority, 22% lack a comprehensive IT strategy.

Now that the pandemic technology rush has stabilized and in-person classes have largely resumed, schools have the opportunity to take a step back to analyze the results of their edtech purchases and form a more cohesive, long-term digital transformation strategy.

Edtech spending is estimated somewhere between $26 and 41 billion per year.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How digital transformation affects schools

It is important to not only understand what digital transformation means to the education sector or the future of teaching, but also recognize how it affects the individuals who make up school districts and systems.

IT teams

As a central stakeholder in any school's digital transformation program, IT teams often feel the effects before other school staff. Digital transformation can mean increased responsibilities, but also greater efficiencies and individual opportunities for leadership and influence.

Opportunities:

- More influence as a strategic leader
- Streamlined processes
- New efficiencies and scalability
- Easier achievement and maintenance of compliance

Challenges:

- Securing funding
- Juggling more work and responsibilities
- Making procurement decisions
- Addressing cybersecurity challenges

Administrators

Administrators frequently have to make complex decisions to execute successful digital transformation strategies. They are often operating without clear precedents to follow, so it is important they seek advice and best practices from colleagues, other districts, and industry consultants who have successfully implemented digital transformation programs.

Opportunities:

- Driving the evolution of their school
- Supporting greater student success
- Enhancing the ability to spot student behavior concerns
- Supporting teacher efficiency and creativity

Challenges:

- Securing and allocating funding
- Understanding rapidly shifting landscapes
- Ensuring student privacy and online safety compliance
- Navigating the right balance of training, tech, and teaching to support learning

Teachers

Teachers play a pivotal role in bringing edtech into the classroom. It is important that teachers be included in digital transformation strategy and implementation discussions, as they might need to take additional training on the new solutions and rethink their daily tasks and lessons.

Opportunities:

- Expanding student worldviews with personalized, gamified, and/or immersive learning
- Preparing students for college and the workforce
- Guiding learning and connecting with students
- Providing tiered intervention

Challenges:

- Adjusting teaching methods and lesson plans
- Managing student distractions/behaviors
- Teaching digital citizenship
- Learning new technology

Students

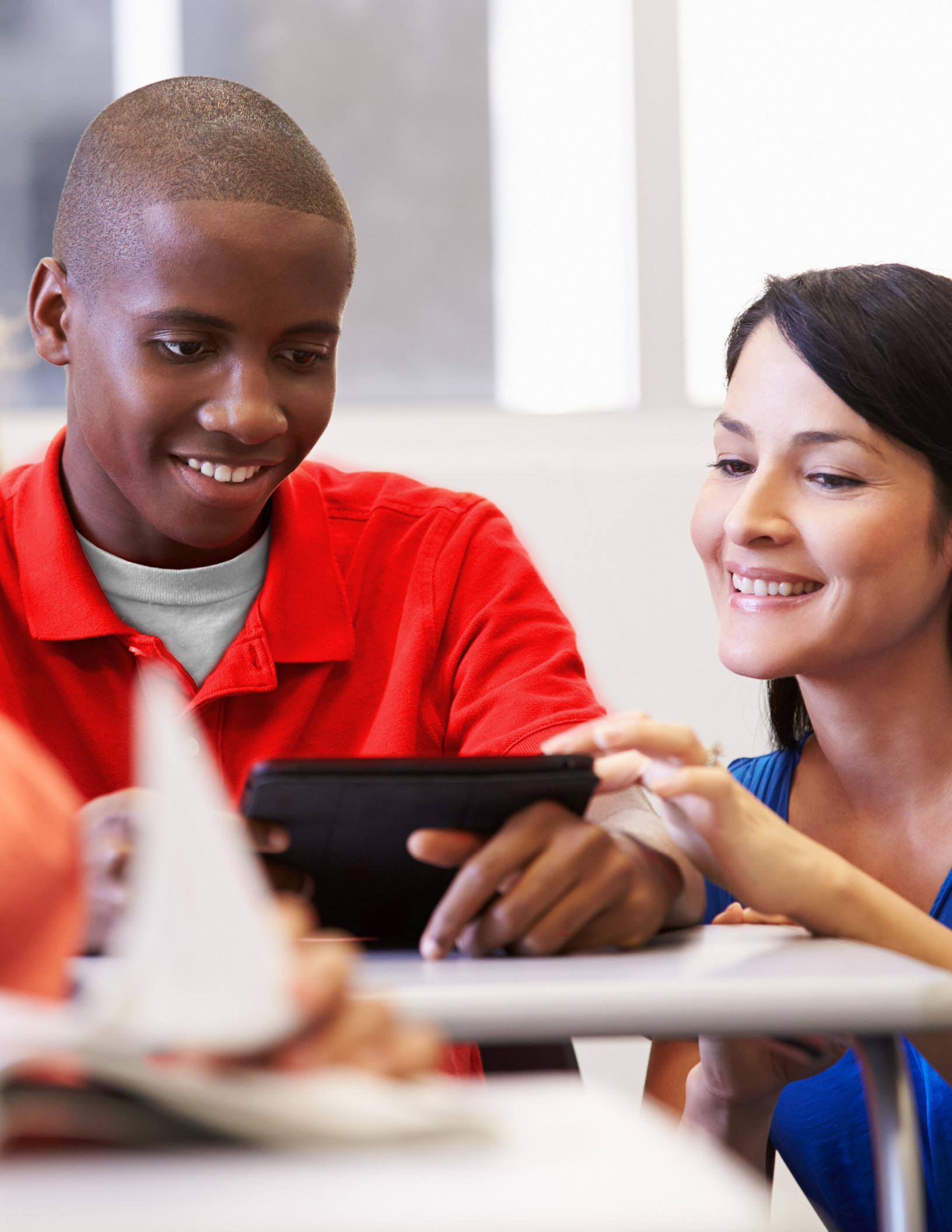
Digital transformation gives students the technology and training they need to become responsible 21st-century digital citizens. For many of today's students, digital devices have been the norm throughout their educational experience. For others, it marks a pronounced change that requires new skills and adjusted learning styles.

Opportunities:

- Learning 21st century skills and engaging in career exploration
- Enjoying new types of creative and collaborative learning
- Benefitting from inclusivity (STEAM, eSports)

Challenges:

- Understanding the importance of data privacy
- Securing equitable digital access
- Dealing with cyberbullying behavior
- Meeting higher expectations



Types of infrastructure

A digital program is only as powerful, functional, and reliable as the infrastructure on which it is built. The U.S. Department of Education has an expressed goal that "all students and educators will have access to a robust and comprehensive infrastructure when and where they need it for learning." That infrastructure includes some elements for which cities and counties are responsible — such as universal connectivity. Schools and districts are responsible for providing virtually all other components. While infrastructure needs may vary by district, there are a few common elements.

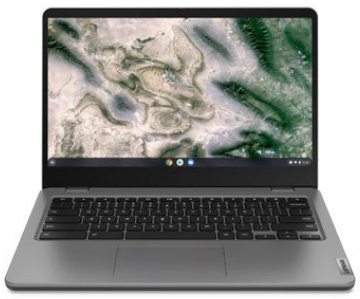
Devices

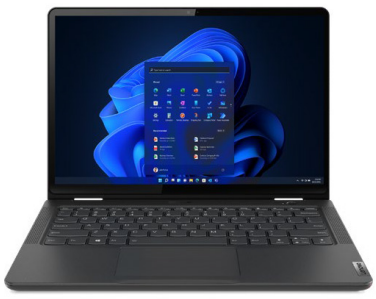
Laptops and tablets

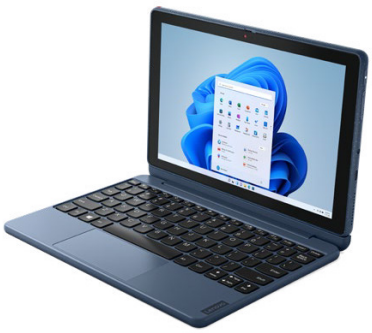
Laptops and tablets are the most common devices found in schools. Often, school districts choose to purchase tablets for younger students whose functionality needs are more limited, and laptops for older students who need a keyboard and a more powerful device.

Considerations for laptops and tablets:

- **Affordability** – Which devices will be most effective for your budget? Many schools choose Chromebooks for their lower price point.
- **Durability and water resistance** – Will the device withstand normal wear and tear? Students can be hard on devices, so durability is key.
- **4G and LTE connectivity** – Will the device be able to maintain a strong network connection? Older devices may struggle to keep up with the demands of today's users.
- **Special features** – Are any advanced features needed for specific classes or grade levels? For example, art classes may require a pencil-touch screen.







Device management

It can be challenging for IT teams to manage the multitude of devices the school or district owns, especially when device loss and theft are common. It is a smart idea to deploy a software that can help you track and maintain your device fleet.

Considerations for selecting device management software:

- **Geolocation functionality** – Can the software help you geolocate devices? This will be necessary if a device should go missing.
- **Proactive predictions of future hardware issues** – Do you have a software that can help you avoid hardware failures? Predictions of future issues can help you take proactive measures before device-related downtime occurs.
- **Analytics** – Can the software tell you how often devices are being used? This will help you address gaps in digital adoption and reallocate your device fleet where possible.
- **Remote wipe and lock features** – Does the application enable you to apply lockdown measures in the event of device loss or theft? This will protect any student data that is stored on or accessible through the device.
- **Self-healing for mission-critical apps** – Can the software protect your most important applications from unauthorized changes? Self-healing functionality gives apps the power to heal and reinstall themselves whenever they are disabled, altered, or uninstalled.

Device protection

Kids can be tough on devices, especially when they are transporting them between school and home each day. A device protection plan can help you reduce expenses that result from the inevitable drops, spills, and other accidents.

Make sure your protection plan covers:

- **Multiple repairs** – What happens if you need to repair multiple devices per year? Some protection plans only cover one fix, which is not much help when you are budgeting for an entire fleet of student devices.
- **Labor, parts, and system replacement** – If a device needs more extensive work, will your protection plan cover everything needed for system replacement? Make sure labor and parts are part of the included package.
- **Device replacement** – Will the plan cover device replacement in certain situations? Ensure the protection plan can still help you control costs when devices are not fixable.

Security

According to Microsoft security data, around 83% of reported enterprise malware encounters come from the education sector each month. In addition, digital dangers like ransomware affect schools in high volumes, while phishing attacks cost U.S. school districts a median of $2 million.

Web filtering

Web filters are a staple for school security, partly because they are a requirement for schools that want to receive certain E-rate funds. However, not all web filters are alike.

Make sure your web filter includes the following:

- **AI-driven threat detection** – Does the filter have built-in intelligence to recognize and block malicious sites and files?
- **Granular customized filtering** – Can you set specific, customized rules about who can access certain websites and when?
- **Compliance** – Is your web filter compliant with the required regulations?
- **Works with mixed environments** – Does your filter work for all of your devices?
- **Remote capabilities** – Is your filter cloud based? Cloud-based web filters can support distance learning, whereas self-hosted filters only work on the school's network.

Endpoint protection / Endpoint detection and response (EPP/EDR)

EPP/EDR software helps detect and remediate cyber attacks in real time. It is an important component to a school's defense system to stop ransomware and other attacks.

Make sure your EPP/EDR software has these key features:

- **Automatically detect and remediate attacks** – Can the software automatically recognize and make decisions to block and remove malware before damage spreads?
- **Monitor devices connecting to your network** – Can you see which endpoints your network is servicing to investigate devices that should not have access?
- **Protect against attacks that leverage IoT** – Does the software protect against cyber criminals who use IoT devices as easy portals to your network.
- **Automated recovery** – In the event of a successful ransomware attack, does your endpoint security make it easy to recover files?

Student safety

Unfortunately, not all digital threats are external to the school. For example, cyberbullying is one of the major issues 85% of U.S. educators worry about.

Make sure you have security software in place with the following features:

- **Keyword monitoring for suicide, violence, and cyberbullying** – Do you have a way to monitor for concerning digital conversations between students? Deploy software that can alert you when a device's keystrokes indicate students are discussing or searching about concerning topics online.
- **Reporting and screen capture** – Does the software provide screen captures of concerning conversations and allow you set up recurring reports? These features will make it easier to review flagged conversations on a regular basis.
- **Configurable settings** – Is the software configurable to support customized settings? For example, you may not want to flag conversations about cyberbullying that take place during a cyberbullying task force chat.

88% of schools are concerned about mental health, self-harm, and suicide among students.

Educational software

Educational software ranges from software that supports the delivery of lessons to the curricula itself. While schools will use a wide range of software based on their specific goals and needs, essential software includes classroom management and learning management solutions

Classroom management

Classroom management software (CMS) is installed on both teacher and student devices to help teachers guide digital learning, promote collaboration, reduce digital distractions, and maximize teaching time. It enables teachers to see what students are working on and to help redirect them when needed.

Make sure your CMS has these features:

- **Screen monitoring** – Does it include screen monitoring capabilities? This is essential for helping teachers maintain visibility into students' digital activities within the classroom but also while distance learning.
- **Messaging** – Does the CMS enable teachers to message individuals and groups? A messaging feature offers a discreet way to assist students when they have a question or redirect them when they are off task.
- **Website pushes** – Can teachers send all student devices to the same web page? This saves time during activity transitions, particularly for younger students and those new to using technology.
- **Teacher-defined web filter** – Can teachers use the CMS to set temporary or permanent web filtering rules for their class? This is helpful for limiting distracting or bandwidth-intensive websites (such as YouTube) that may not be appropriate during certain classes.
- **Blank screen** – Can the instructor blank out student screens with the push of a button? This enables them to redirect focus to the front of the room.
- **Share screen** – Can students and teachers broadcast their screens to the class? This feature makes student-led learning and presentations easier and facilitates lessons during distance learning.

Make sure your CMS has this functionality:

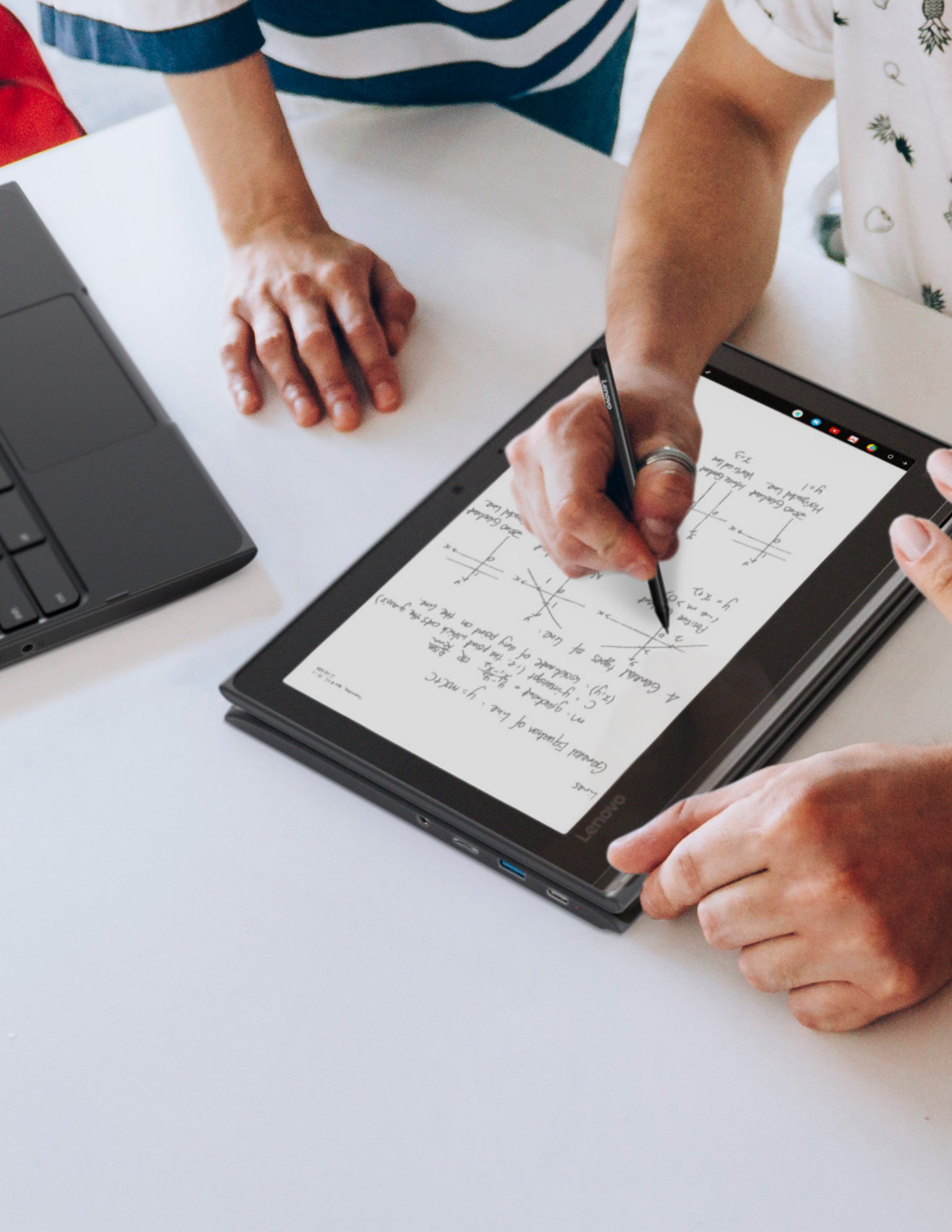
- **Easy Implementation** – Simple to install, configure, and manage multiple devices and users.
- **Continued support** – Seasoned customer success team and access to trainings to help with adoption and usage.
- **Website pushes** – Can teachers send all student devices to the same web page? This saves time during activity transitions, particularly for younger students and those new to using technology.
- **Flexibility** – Supports distance learning and in-class instruction with ease through cloud-based or local hosting.
- **Conferencing integrations** – Ability to use alongside conferencing tools like Google Meet and Microsoft Teams to enable synchronous learning.
- **Device & Platform Agnostic** – Compatible across operating systems and in mixed use device environments, including Windows, Mac, and Chromebooks.

Learning management system

A learning management system (LMS) is used for the administration, automation, and delivery of educational courses. It has become an essential component of digital transformation for schools, as it supports more frictionless communication among students, faculty, and parents.

Ensure your LMS offers:

- **Course management** – Does the LMS offer a way for teachers to post student grades, assignments, and other class materials? This is a standard function of any LMS.
- **User and group management** – Can teachers set rules around which users or groups receive what content? This can be helpful for personalizing learning for different students.
- **Testing and assessment** – Can teachers administer tests through the LMS? Having testing and course management functions in the same software can streamline the process of grading assessments.
- **Sharable Content Object Reference Model (SCORM) compatibility** – Does the LMS offer SCORM compatibility so teachers can share learning content across systems? This inter-platform compatibility is important as your school's digital program becomes more advanced and complex.
- **Reporting and analytics** – Does the LMS share relevant analytics to help teachers track student progress? These might include analytics on each student's time spent on lessons and sections, grade-related details, and reporting on the number of assignments completed.
- **Reminders and announcements** – Can teachers use the LMS to share reminders and announcements? Students and parents rely on having a central location to view important information.
- **User authorization tools** – Can teachers or IT team members customize access rules by user? This is an important security feature for protecting student data.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Elements of a good digital transformation strategy

Digital transformation can be a time-consuming and resource-intensive process that requires careful planning and documentation. As with any IT project, having a thorough strategy in place before you begin will help you accomplish a few things:

- Gain clarity around your goals and priorities
- Communicate the process and expectations with all key stakeholders
- Allocate funding and set achievable timelines
- Stay focused and confident when you hit roadblocks

Who should lead your digital transformation strategy?

Typically, digital transformation is spearheaded at the district or system-wide level, led by the organization's top IT professional. However, sometimes a school IT manager or administrator may lead the initiative for their individual campus.

Whoever is responsible for your digital transformation strategy should facilitate collaboration among all key stakeholders, including IT teams, school budget managers, administrators, teachers, students, and parents.

Nine steps to creating an effective digital transformation strategy

1. Audit your existing edtech and reasons for digital transformation

As a modern school district or system, chances are you are not starting from scratch when it comes to digital transformation. You most likely have a wireless network with basic security software or appliances in place, a few digital devices (or a full-fledged 1:1 program), as well as other edtech software and application licenses.

Before you start working on your larger digital transformation efforts, it is important to identify where you are, in terms of edtech and processes, and where you want to go.

Ask a few key questions in this discovery process:

- What is our mission and purpose in driving digital transformation? What are our measurable and subjective goals?
- What tech and processes are already in place?
- What is missing? What could be improved?

As part of this process, it is important to also seek input from your educators and start a formal feedback loop. When teachers have a hand in driving the changes, you will be more in tune with the types of edtech they need and will be most likely to use.

2. Analyze and identify your needs

Now that you have assessed your existing assets, spend some time identifying your needs and goals.

Think carefully about the resources you will use across key categories, including:

- **Technology** – This is the biggest category and will take up a significant portion of your plan. List in as much detail as possible the infrastructure you need to add to make your goals a reality. Be sure to allot 10% of your budget for miscellaneous needs you may discover along the way. See "Types of infrastructure" section for a starting point.
- **Personnel** – Do you need to hire additional team members or promote existing personnel to positions with greater responsibilities? Be realistic about the time needed to research, implement, and manage new technology for the future. Include any technology partnerships and grant writing help you may need for a seamless implementation.
- **Support** – Whose buy-in do you need to make your digital transformation a success? Consider short-term stakeholders like PTA leadership as well as longer-term stakeholders such as administrators and school board members.

3. Prioritize your needs

Digital transformation strategies should be realistic and achievable, which means you cannot take on every piece of it at once.

Prioritize your needs by taking into account these factors:

- Pain points caused by not having this technology in place
- Benefits to teachers and students once the technology is available for use
- Security needs
- Cost / expected ROI
- Ease of implementation
- Availability of champions for this technology (e.g. Are there teachers who are asking for this app or device?)

You know your school's resources, culture, and capabilities better than anyone. Set your list of priorities and review it with other key stakeholders to see if they are in agreement.

4. Create your rollout plan

Once you have put your priorities in order of importance, you can start to create your rollout plan. This should be a roadmap for your digital transformation, which typically will include more detailed timelines and tactics for near-term priorities and more general goals for the future phases of your plan.

Consider applying for grants to help fund later phases of your digital transformation.

5. Identify pilot groups and teacher advocates

Having teacher support can make any technology rollout much smoother. When possible, take advantage of software free trials to run pilot groups to collect feedback and win over teachers who can help drive adoption among their colleagues down the road.

When you are looking for pilot group participants, include all of the following:

- Tech champions
- Tech-hesitant faculty
- Seasoned teachers
- New teachers
- Positive / supportive allies
- Critical / outspoken voices
- Variety of departments

Remember the purpose of your pilot program is to determine whether you want to adopt this technology, so be sure to define in advance what success will look like.

Helpful reading: How To Set Up and Manage A K-12 School Software Pilot Program

6. Train teachers and students

Successful technology adoption depends on teachers' ability to use the tech proficiently. Set your faculty up for success by providing a variety of training tools.

Your faculty most likely includes people of different experience and comfort levels with technology, as well as a variety of learning styles, so it is a good idea to employ a mix of the following:

- **Training videos** – If the vendor has a YouTube channel or Help Center, share their training videos with your staff. Or, consider making some of your own.
- **Webinars** – Offer quarterly training webinars and enable teachers to join and ask questions. Record these sessions to put on your school's YouTube channel for future reference.
- **Teacher-led training** – Tap into your most powerful advocates by asking them to serve as informal training guides for other teachers. When a teacher has a question about a new technology, it may be easier to walk across the hall and ask a colleague than track down an IT team member.
- **Vendor-led training** – Some vendors offer on-site training. Take advantage of these opportunities by inviting the entire faculty to attend.

7. Parent communications

When you are implementing a new technology, parents may have questions about how their student will be affected. Be sure to communicate early and often about your digital transformation goals, opportunities, and timelines to keep parents apprised.

For example, LanSchool provides an FAQ for schools to share with parents. LanSchool Software: Brief Guide for Parents

Consider doing the following:

- Updating the PTA on key milestones
- Sending monthly or quarterly newsletters addressing any new technology in use
- Sharing any vendor-provided parent FAQs or other relevant resources
- Offering office hours or assemblies during which parents can ask questions

8. Student rollout

Once a technology has been piloted and teachers have been trained, it will be time to release it to students. In some cases, teachers will be able to train students by themselves. Other times, you may need to step in and offer training to students.

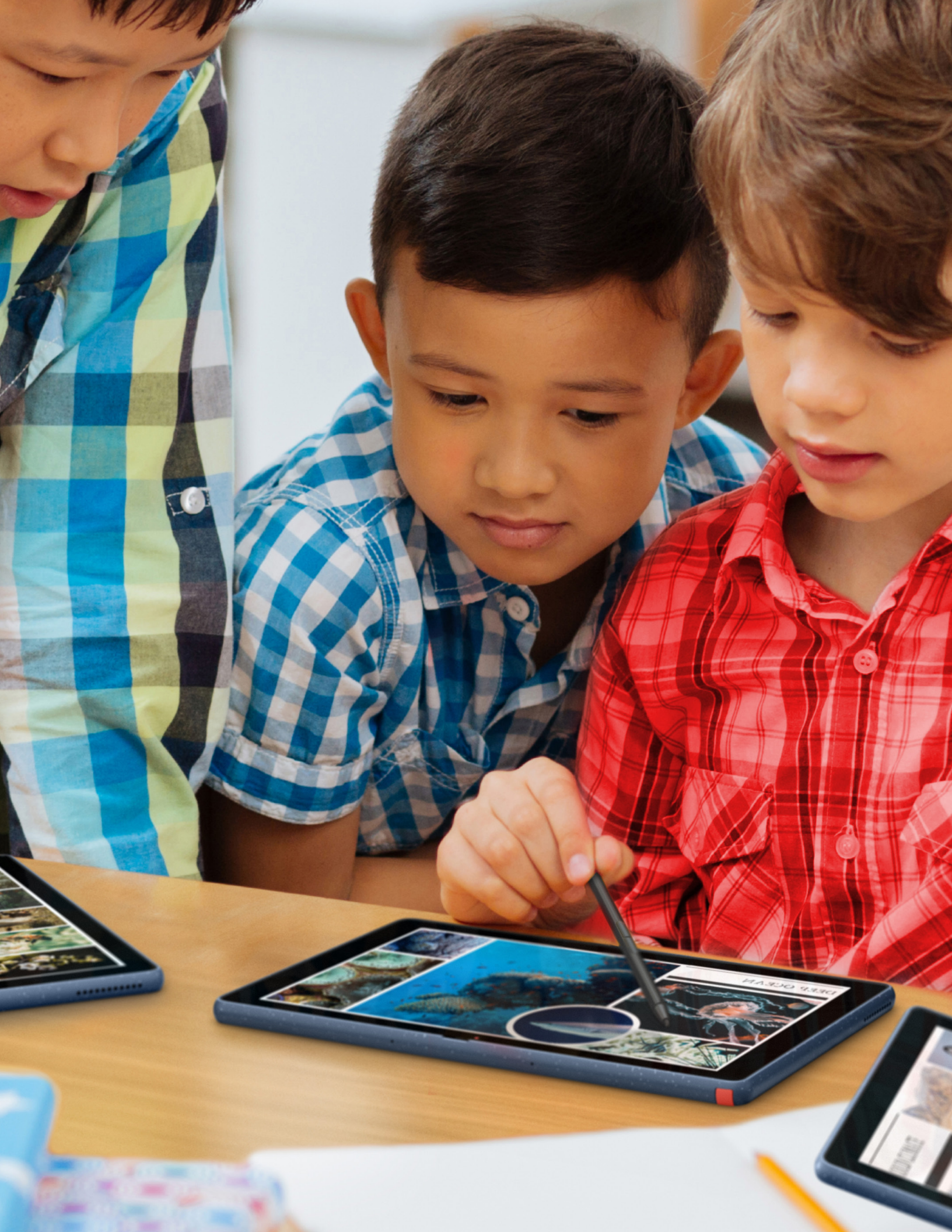
Consider the following:

- Younger kids may need more targeted training than older students
- Students, like teachers, may benefit from a repository of online training videos and articles
- Set rules of engagement and expectations for behavior with each technology

Students have a propensity to find "hacks" to circumvent security software and perform functions that may not be intended by the school. Consult individual vendors for solutions that can avoid these workarounds and keep students and their data safer.

9. Maintain and reassess

Once your digital program is up and running, begin collecting data based on the goals you set in your digital transformation strategy. Consider how often you want to reassess a given technology and be sure to schedule those regular assessments.



Why you need a trusted partner

Digital transformation is a journey, not a one-time project. Typically, it takes around five years for any organization's digital transformation to start feeling cohesive. Throughout that time, technology will continue to evolve, making digital transformation an ongoing initiative for schools.

From choosing solutions to optimizing your new infrastructure, there are a large number of decisions to make at every step. Working with a dedicated partner to support your digital transformation goals can eliminate stress and streamline your experience.

Here are a few key ways they can help:

1. Save time on product research

Working with a digital transformation specialist can help you make faster and more informed decisions about products and solutions. Most partners will have a specific group of products they know and recommend.

2. Have one number to call when you need support

In some cases, your digital transformation partner may also be a product vendor. Consolidating your technology under a brand like Lenovo can simplify your support needs under one team. This makes it easier to get the help you need with fewer calls or emails.

3. Make sustainable decisions

Working with a partner can help you think through your long-term strategy for digital transformation. For example, your partner can give advice on the technology landscape and when to make certain purchases or delay until the next model or version comes out.

4. Ensure ease of implementation

Your partner will have been through numerous implementations of the products and solutions you are integrating. This makes implementation easier because you will know what to expect, including common challenges and how to solve them.

5. Deliver the training faculty and staff need

Training is one of the most crucial components of success for any digital transformation, as it directly affects adoption rates and usage of your new technology. Your digital transformation partner may offer formal training for your new solutions, which can take this time-consuming responsibility off your list.

Streamline edtech purchasing

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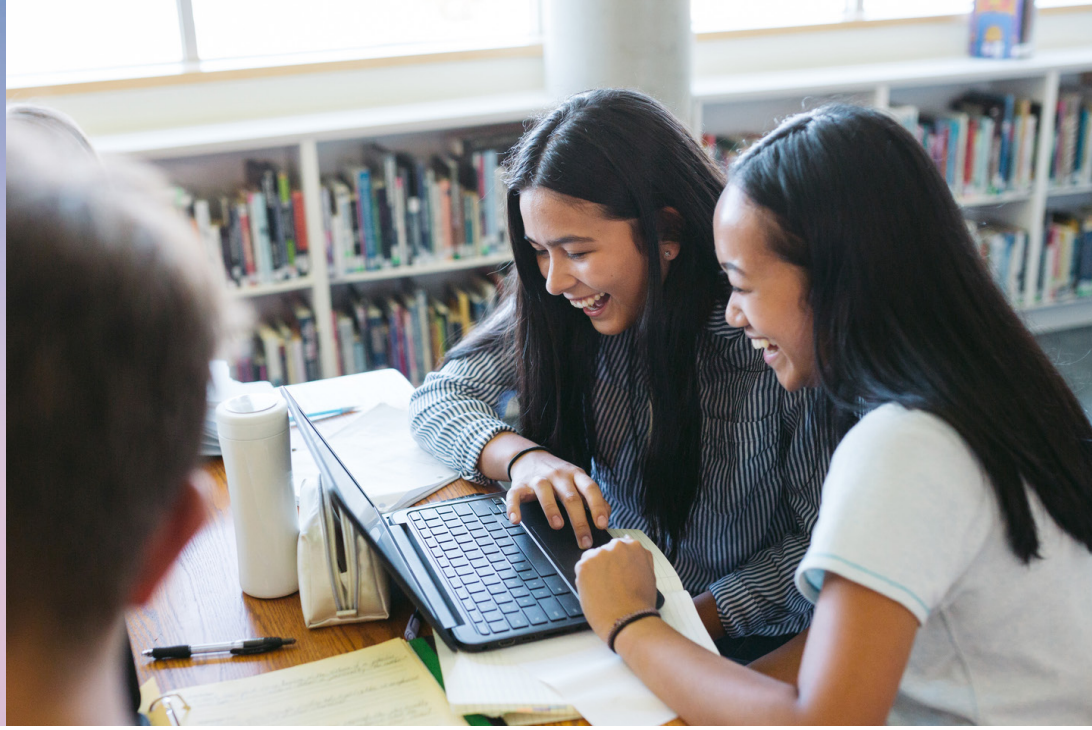
		Bundle 1	Bundle 2	Bundle 3
LANSCHOOL air LANSCHOOL classic	• Pioneer of classroom management software • Robust feature set maximizes teaching time • Host in the cloud, locally, or both • Supports mixed device environments	✓	✓	✓
Lenovo NetFilter Lenovo NetFilter+	• Cloud-based, AI-driven web filtering • Documentation with built-in reporting • Categorization available in over 40 languages • Real-time keyword monitoring	✓	✓	✓
ABSOLUTE®	• See all devices, on or off network • Data collection for usage and inventory management • Customizable dashboard and reporting • 365 days of historical logs		✓	✓
SentinelOne®	• EPP solution • Easy to deploy and manage • Predict, stop, and correct effects of attacks • One-click remediation and recovery			✓
Lenovo Device Intelligence Plus	• Monitor, predict, and prevent device issues • Uses AI to monitor school and district patterns • Less device downtime and reduced IT support costs • User experience scoring and asset optimization insights			✓



Conclusion

The digital transformation journey does not take a straight course. Your plan will be a living document. You can expect to change course on some of your priorities, strategies, and programs as technology evolves and your budget shifts. And as with any journey, you may experience moments of both frustration and victory.

The good news is that digitizing your school or district will become easier with every decision you make, because you will be gaining valuable knowledge and experience along the way. What seems daunting now will become approachable after you have been through the process and started achieving goals.

So try to not let fear of the unknown stop you from leading your school into the future. Your strategy does not have to be perfect — with a clear vision, patience, and a willingness to learn, you will have all the tools you need to succeed.

Along with trusted partners, Lenovo has built solutions to help schools adapt to the dynamic settings of today's learners and modern education environment. Along with our trusted partners, Lenovo offers dependable and budget-friendly tools to promote engagement while keep students and networks safer online. Beyond software and devices, Lenovo's world-class services deliver end-to-end solutions that help schools maintain, manage, and protect their investment. Our aim is to empower educators by providing them with solutions to support students as they build confidence in a tech-forward world.

Contact us

To find out how the Lenovo ecosystem of education solutions can support your digital transformation strategy, get in touch with us.

lenovosoftware.com/education/ **833-247-2527** **sales@lenovosoftware.com**

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