



Leveraging and Securing Data for Education



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Insights to help K-12 and higher-education leaders
drive true digital transformation

Leveraging and Securing Data for Education

Data has become indispensable to schools and colleges. The knowledge educators and administrators can derive from high-quality data enables more effective teaching, learning, and campus operations.

From back-office functionality to advanced uses of data to inform instruction, capturing and processing student information is essential to the business of education, whether learning occurs in person, remotely, or in a hybrid format.

Using data effectively brings many challenges. Institutions are tasked with understanding what to do with data, managing it successfully, keeping it secure, and safeguarding student privacy, among other concerns.

Recently, Microsoft and eSchool Media hosted a series of webinars exploring these topics.

This interactive ebook summarizes the content from these webinars and includes video highlights. It offers advice to help school and college leaders achieve true digital transformation by effectively leveraging and securing data for education.

From back-office functionality to advanced uses of data to inform instruction, capturing and processing student information is essential to the business of education, whether learning occurs in person, remotely, or in a hybrid format.

The speakers for these events included:



Dr. Matthew X. Joseph
Executive Director of Learning,
Providence Public Schools in
Rhode Island



Mike Treguboff
Director of Network Operations,
Peoria Unified School
District in Arizona



Douglas A. Levin
National Director,
K12 Security Information
Exchange (K12 SIX)



Jason Morales
Business and Strategy Leader,
Data & AI, Microsoft

The value in data for education

Having accurate data can help educators and administrators make more informed decisions that can save their institutions money, improve efficiency, and lead to better instruction. For schools and colleges to realize these benefits, however, they need to turn data into actionable insights.

“A phrase we heard a lot when I was a principal was that we were data-rich and information-poor,” Joseph said. “We had a lot of numbers, but we didn’t have the information” needed to make better decisions.

Data analytics tools can help. Sophisticated new technologies can aid in making sense of student data so educators have the information they need to ensure students’ academic, social, and emotional needs are met.

For instance, [Education Insights](#) provides real-time analytics of participant progress and activity within Microsoft Teams. With easily digestible visualizations, educators can easily track student experiences and receive meaningful data to make more informed instructional decisions.

The next frontier in data use for education is empowering students with the tools and data to plan their *own* learning.



Listen to Joseph as he describes
this scenario in more detail.





Making the most of data

Leveraging data to transform education is a tall order. Here are five strategies that can make this process easier.



01

Ensure the integrity of the data

You can't make effective decisions without accurate data to guide them. Make sure you're collecting the right information you need to support your intended course of action. Begin with your end goals in mind, and work backwards to figure out what data points you need to achieve these goals. Also, make sure the data you're collecting is valid and reliable.

02

Break down siloes

The real value of data lies in the ability to get a big-picture, 360-degree view of a student's progress and abilities. "Every application we have has analytics built in," Morales said. "The challenge is not, 'Can I get the data from this application?' The challenge is, 'How do I get data from this application and from that application and from a data set I haven't even created yet—and how do I bring that together to have a more comprehensive view?'"

To achieve this big-picture view, disparate systems and applications must be able to integrate and share data with each other. Personnel from various departments should also be talking with each other on a regular basis.

03

Communicate data's value effectively to stakeholders

Data can often have a negative connotation in education. As Joseph observed, when administrators show a slide with student data to a room full of educators during a meeting, the mood of the room often deflates.

There are many reasons for this. For instance, overworked educators might view data-driven decision making as yet another task piled on top of their already overflowing plates. They could be intimidated by data. They may believe they're being judged by their students' test scores, or they might not feel supported in using data effectively to enhance their instruction.

How administrators talk about the use of data matters. Educators care deeply about their students' success, and most truly want to improve their practice. Being intentional in your language and tying data use to these goals can help bring educators on board.

"Educators are more receptive to (certain phrases)," Joseph said. "If you say, 'This is information that can help support your instruction,' they might think: 'OK, I'm going to listen to that.' If you say, 'Here's data about your test results,' they might think: 'Oh, I'm out.'"



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04

Build trust

Creating a culture of data use requires trust. Educators must trust schools are using data to improve teaching and learning and not to evaluate their job performance. Parents must know schools are safeguarding student information and not exposing their children to unnecessary risks. Everyone must be confident data is being collected, stored, shared, and used in a secure, fair, and responsible manner.

This trust comes from being fully transparent in your institution's use of data, establishing and communicating sound policies around data use, and training staff in how to use data appropriately, among other measures.

05

Partner with the right provider

Your choice of service providers also matters. Choosing partners who value student data privacy and who have established strong security protocols is essential.

))) **Listen to Morales as he explains this point in more detail.**





Three keys to effective data management

Using, managing, and securing data in education depends on **three key elements** working in conjunction with each other: people, processes, and technologies. Here's a closer look at each of these elements in particular.

01

People

Secure and responsible data use starts with the people who come into contact with student data—including employees, parents, and students themselves.

Employees must be trained in how to store, access, analyze, and share data appropriately. What's more, all stakeholders must learn best practices in cyber security, such as how to choose strong passwords and keep them secure—as well as how to recognize and avoid possible phishing scams.

“All we need is one person to fall for increasingly sophisticated scams” for computer systems to be compromised, Levin said.

))) Listen to Treguboff as he describes his own district's experience with phishing scams—and what his district has done to combat them.



02

Processes

Schools and colleges also must establish clear policies to support their staff members in using data safely and responsibly. These data governance policies should include information about:

- What uses are acceptable and prohibited for various types of data, such as student directory information, personally identifiable information (PII), and de-identified data—as well as who has permission to access which types of data and for what purposes.
- Acquisition and use of third-party apps and services that collect student data in any capacity. If only specific apps or services are approved for use, make this list widely available.
- Plans for monitoring policy compliance, as well as the consequences for non-compliance.

The federal government's Privacy Technical Assistance Center (PTAC) has put together [this useful checklist](#) to help schools create appropriate policies around data use.

03

Technologies

People and processes are the first two legs of the stool, but having the right technologies can also help institutions use data effectively.

))) Listen to Morales as he describes a powerful data visualization tool that Microsoft offers to enhance this process, called [Power BI](#).



The need for cyber security

Digital transformation can't happen in schools and colleges unless networks and data are kept secure. Cyber criminals are increasingly targeting educational institutions, and no school or college is beyond the risk of attack.

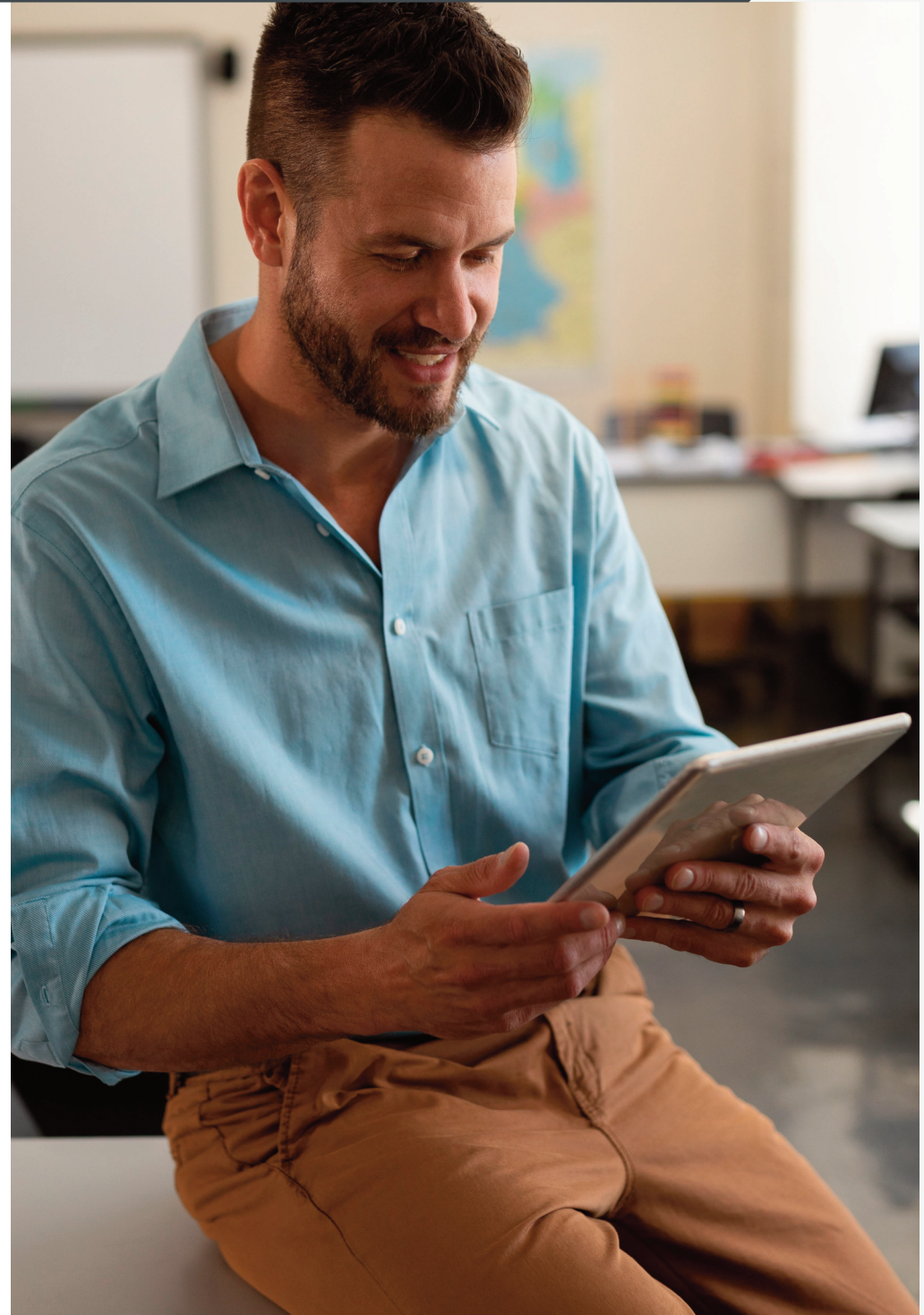
As Levin explained: "Those who are interested in identifying theft are much more interested in the personally identifiable information of minors who have not yet established credit records. They can abuse those records for years and years before they're caught."

The global pandemic has changed how institutions think about cyber security. Previously, schools and colleges could focus on bolstering their perimeter defenses to keep hackers from breaching their networks, like a castle using walls, moats, and other means to repel intruders. However, the pandemic has shifted the dynamic and demonstrated that learning and working can occur anywhere, including from home. IT leaders must give students and employees the ability to access network resources from on or off campus, while preventing unauthorized use.

"That's a whole different architecture to try and protect," Levin noted.



Listen to Levin as he explains why schools and colleges need to be proactive in addressing cyber security.





How to keep data secure

There is no such thing as total network security. As Treguboff said, “100 percent security is zero percent use. We have to find a balance. There’s always some risk.” That said, there are many steps that education leaders can take to safeguard student information.

Levin’s organization recommends **four basic areas** that every school or college must address:

01

Secure all traffic to and from the network

Implement a firewall system that can inspect all traffic entering and leaving your network and block malware or other suspicious activity. Also, limit the use of ports and services on your network that are exposed to the internet by default, such as by use of the Remote Desktop Protocol.

02

Secure endpoint devices

Make sure students don’t have administrative rights to any laptops or other devices owned by your institution, Levin said, so they can’t install whatever software they want. Also, make sure the devices themselves have endpoint protection, such as antivirus software.

03

Focus on user authentication

Train students and employees in best practices for creating and using strong passwords, such as creating passwords that are hard to guess but easy to remember, never sharing passwords with others, and using different passwords for different accounts. Also, consider requiring multifactor authentication for employees to log onto the network.

04

Perform routine security maintenance

Regularly back up critical data. Install security updates and patches in a timely manner. Routinely test your security defenses to make sure they’re working properly. Audit IT and data systems to see where they might be vulnerable. Review the data you’re storing to see what can be archived or deleted.

“Obviously, schools need to abide by records retention laws,” Levin said, “but that doesn’t mean all data has to be available to everyone in the live system. You want to minimize the risk if data does get exposed.”

[LEARN MORE](#)



Establishing a foundation for success

Using data to make more informed decisions can help drive digital transformation in schools and colleges. However, this is only possible if institutions use data safely and responsibly. By following the advice in this ebook, K-12 and higher-education leaders can set up their institutions for success.

Take advantage of our Security Customer Immersion Experiences (Hands-on labs) - [Customer Immersions | Microsoft 365 | Microsoft](#)

Additional resources

[Webinar: How to Make Data Safe and Networks Sound for Schools](#)

[Webinar: Next-Generation Data Strategies and Solutions](#)

[Microsoft K–12 Education Showcase – Digital transformation resources for K-12 institutions](#)

[Microsoft Higher Education Showcase – Digital transformation resources for institutions of higher education](#)

[Learn more how you can embrace proactive security with Zero Trust](#)

[Read how real-world deployments and attacks are shaping the future of Zero Trust strategies](#)



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