Key challenges facing education technology

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Introduction

Education technology (EdTech) has been rapidly evolving over the past few years, bringing significant changes to the way students learn and teachers teach. From online learning platforms and digital textbooks, to gamification and virtual reality, technology has revolutionised education by providing access to learning resources and creating a more interactive and engaging learning experience.

As the world becomes increasingly reliant on technology, it is crucial to examine the potential pitfalls and challenges that arise with its use in education. The pandemic and the subsequent rise in remote (and hybrid) learning demand schools explore new ways of engaging both with students and staff.

This paper explores the key challenges facing EdTech, including issues relating to resource limitation, management and maintenance requirements, safety and privacy, as well as the need for effective training and offers actionable solutions to help stakeholders overcome these obstacles and create a more effective and equitable educational landscape.
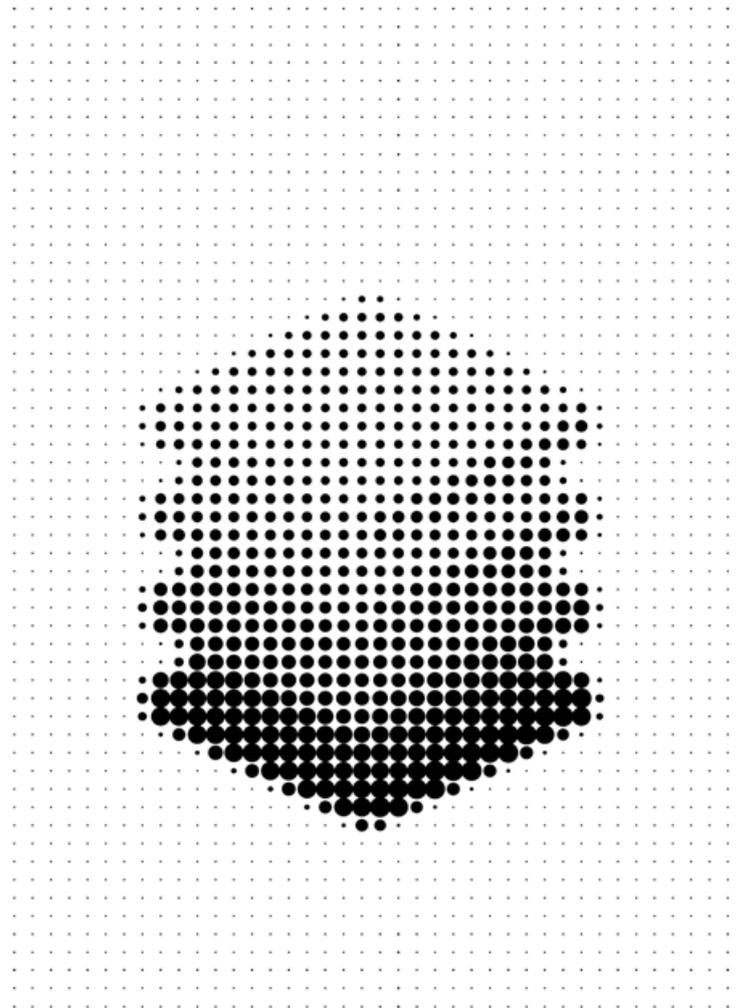
① Resource limitations

Managing EdTech can be a laborious task, particularly when it comes to resource limitations. As much as educators embrace the idea of new technology in classrooms, finding the funds and people to implement and sustain IT remains a challenge.

As with any project, implementing new technology requires significant financial investment, which can be a significant barrier to its adoption particularly when schools often have limited budgets allocated to IT projects. This limitation is further compounded by the fact that maintaining the infrastructure that supports the new technology also requires money.

But a tight budget is not the only hurdle in managing EdTech. The IT teams in most schools are small and already stretched thin in maintaining the existing systems. Therefore, managing the time and resources needed to implement new systems while ensuring the right balance between productivity and security is a significant challenge. The IT team has to find a way to juggle between keeping the lights on and implementing new technology to keep the school at the forefront of technological advancement.
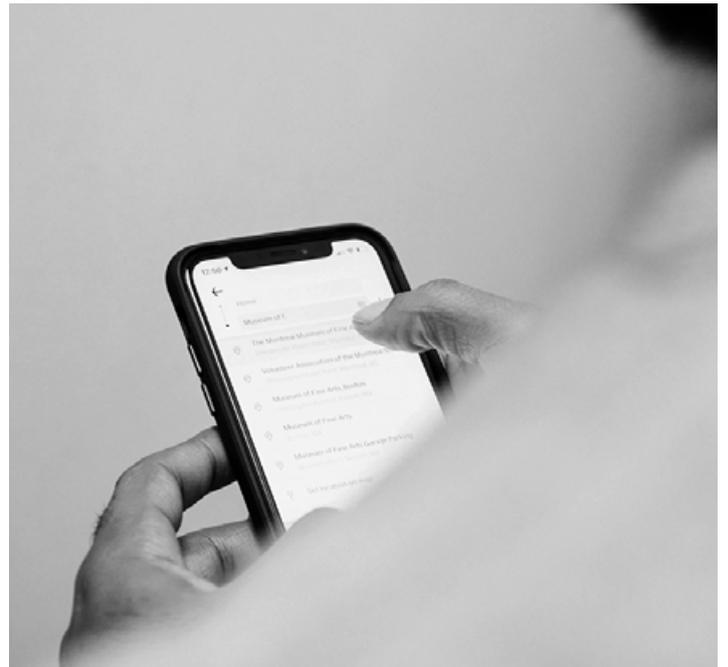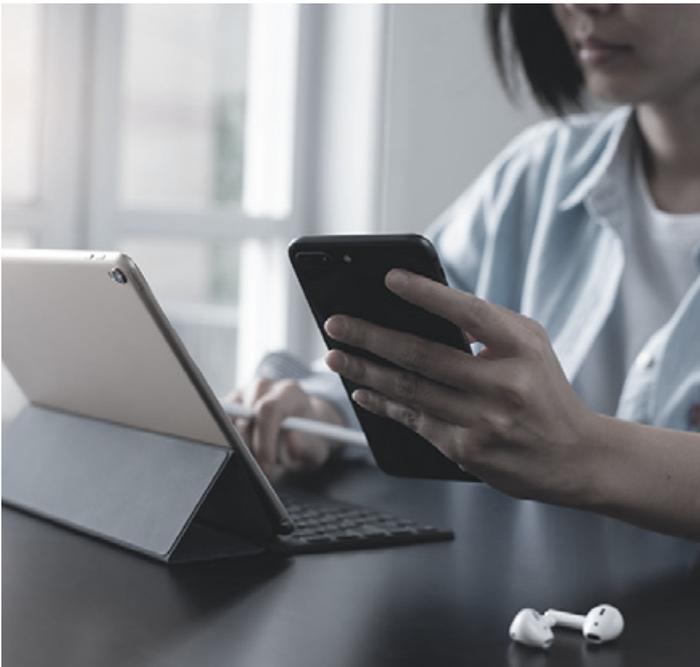
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Strategies to face this challenge

- Automating workflows can significantly reduce the amount of time school IT teams and staff spend on managing EdTech. This efficiency translates into less man-hours and less money spent on implementing and maintaining classroom technology.

- Another effective strategy is to adopt technology workflows that are quick to implement or can be automated for updates. These workflows allow schools to do more with less and reduce the burden on teachers and staff.

- Resource limitations and traditional manual tasks and processes should not hold schools back from adopting new technology or achieving their EdTech goals. Embrace automation to optimise workflows and streamline processes.

How does this translate to endpoint management

A cloud-based endpoint management solution can allow IT teams to manage devices at scale with less people and time spent. Zero touch provisioning and automated patching alone can reduce the resources required to maintain a fleet by at least a third.

2 Skills shortage

Australia is facing an enormous IT skills shortage and the education sector is not immune to this rising issue.

As schools face a plethora of technology challenges, their IT teams require broad skills and knowledge to handle the contrasting complexities. While being generalist allows school IT teams to overcome and address the myriad of issues, it makes it difficult for them to be experts in every area. As a result, when it comes to implementing new technology, specific skills might not be available within the team.

Teachers, on the other hand, might not be familiar with the latest EdTech tools. Whether it's hardware or software applications, the upskilling process can be time-consuming, taking away precious teaching time. However, when teachers gain proficiency in these new tools, it can yield great results for both them and their students.

Parents are also affected by the skills shortage, especially when it comes to technology targeted at students. They may end up using it at home and might require support in navigating these tools effectively. This can add to the overall burden of managing EdTech.

While students may be digital natives, that doesn't mean they know everything about the latest educational technology. They may require assistance from teachers and guardians to fully utilise these new tools. With the right support, students can unlock the full potential of EdTech, leading to improved learning outcomes and engagement.

## *Strategies to face this challenge*

- As we navigate the challenges of managing EdTech, it's crucial to find effective strategies to overcome the obstacle of a skills shortage. One way to tackle this issue is by leaning into the expertise of professionals, such as the team at Somerville, who can provide the necessary skills to implement and maintain new systems. By tapping into the knowledge and experience of these experts, schools can ensure their EdTech initiatives are executed with precision and efficiency.

- Another approach is to provide training sessions for all staff around new technology, giving them the time and resources to brainstorm and determine the best ways to integrate it into their teaching styles. By empowering educators with the necessary knowledge and skills, schools can create a more supportive environment that encourages innovation and experimentation with EdTech tools.

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- It's also important to educate teachers and parents about technology and cybersecurity. By delivering information sessions on these topics, schools can raise awareness and build a culture of digital responsibility that safeguards your data and protects students.

- A NAPLAN practice plan for both students and teachers can also help bridge the gap in skills and knowledge. By providing targeted training and practice resources,

schools can help staff and students build the competencies needed to succeed in an increasingly tech-driven world.

- With these strategies, schools can overcome the challenges of managing EdTech and create a more effective and sustainable digital ecosystem.
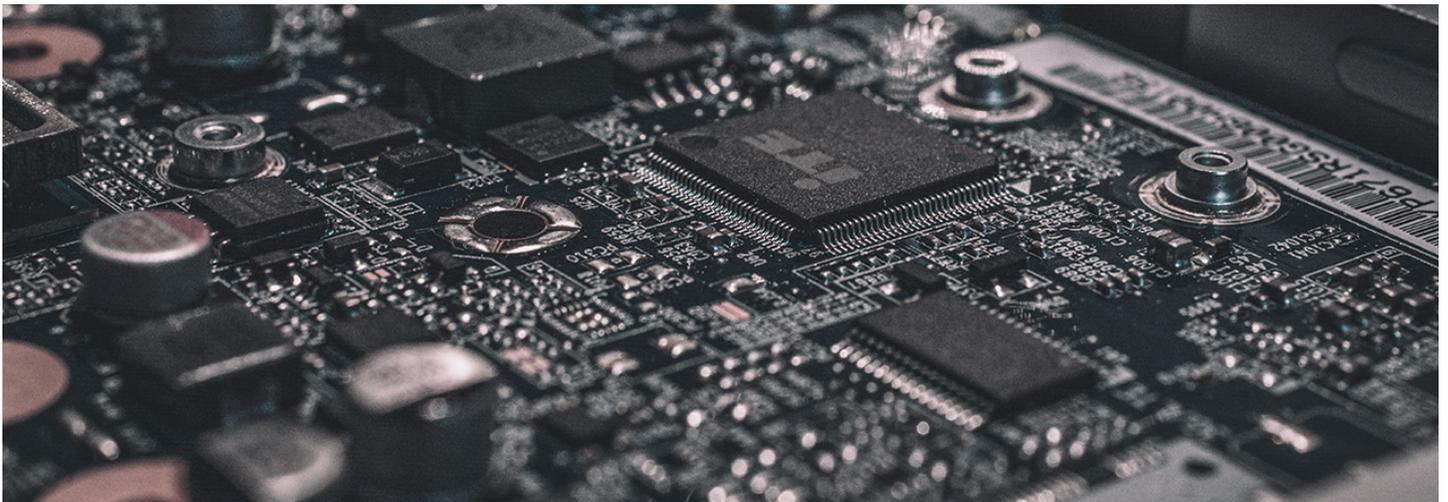
How does this translate to endpoint management

Best of breed solutions that are pre-configured based on industry leading frameworks ensure devices can be secured and optimised with few new skills demanded from your IT team, while allowing the flexibility to customise to suit your specific school needs.

3 Infrastructure and systems maintenance

When it comes to infrastructure and system maintenance, it's not just about having the right configuration. Ensuring everything is kept up to date is essential for building a strong network infrastructure that can support the needs of both students and teachers.

To achieve this, there are several critical factors that must be considered. For instance, a reliable network requires fast and high-quality WiFi in both school and home environments. Additionally, data privacy and security must be prioritised to protect students' personal information. Access to digital resources is also crucial for supporting learning and teaching.

One of the biggest challenges in managing EdTech infrastructure is the ability to manage devices remotely. This can be particularly difficult when students are accessing devices from unsecured networks. With most homework now being done on devices, ensuring secure access to online resources is more important than ever.

When designing and building EdTech infrastructure, it's essential to consider not only current needs but also future growth and change. A reliable infrastructure must be built with care and forethought to support the school's development over the next five years.

In short, managing EdTech infrastructure is a complex task that requires careful consideration and attention to detail. By prioritising factors such as data privacy, access to digital resources, and future growth, schools can build a strong and reliable infrastructure that supports learning and teaching in the 21st century.

Strategies to face this challenge

- There are numerous strategies and processes schools can implement to help overcome the obstacle of infrastructure and system maintenance. First and foremost, implementing systems that can scale regardless of the number of devices is crucial. This can make a huge difference in the efficiency of internal processes and ultimately save schools time and headaches.

- Another effective approach is automating key processes such as patching, which is typically time-consuming and prone to errors when human manual intervention is involved. By automating these processes, systems can remain up to date and run smoothly.

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- Consistency is also crucial when delivering systems and processes. Ensuring systems are delivered in a consistent manner across all devices can reduce headaches, workarounds, and bad user experiences.
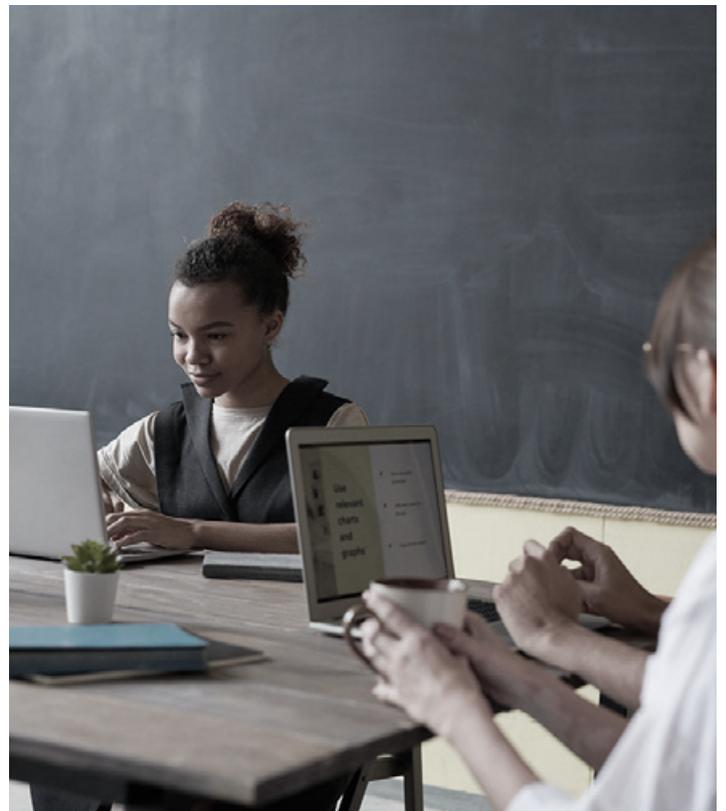
How does this translate to endpoint management

By automating historically monotonous, manual and disparate IT and security workflows like pacthing, app management and provisioning, cloud-based device management systems can drive costs down and save time while enabling schools to streamline and unify end-user device management.
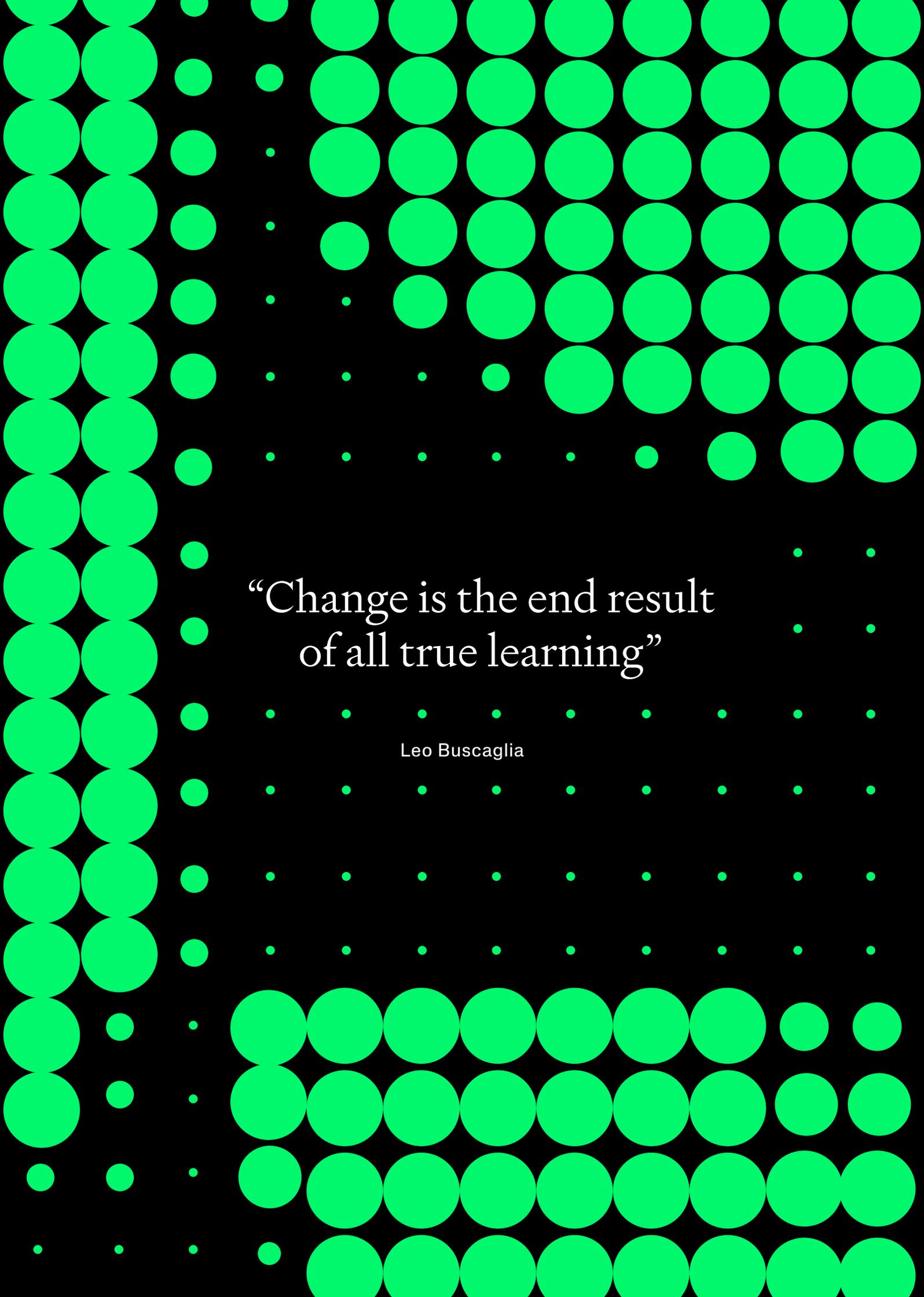
"Change is the end result
of all true learning"

Leo Buscaglia

4 Resistance to change

Contrary to popular belief, this pushback does not stem from a dislike of technology. Instead, it is often due to not receiving the adequate training and support needed to effectively adopt and implement new tools and techniques.

Teachers are educators who take their profession seriously and are constantly seeking ways to improve their students' learning outcomes. Introducing new technology into the classroom can be a risky proposition, especially when they feel ill-equipped to handle it. Without proper training and support, teachers may feel like they are taking a gamble with their students' education. Another reason why staff might refuse to accept change is the lack of a clear vision from school administrators. Teachers need to see a united front and be provided with specific examples of how technology can positively impact their students. When administrators present a cohesive plan and highlight the tools that work, teachers are more likely to embrace change with enthusiasm.

Strategies to face this challenge

- With adequate training and support, combined with a clear vision from school leaders, teachers can become empowered to integrate new technology into their teaching methods, leading to improved student outcomes and a more engaging learning experience.

- It is essential to have a well-defined implementation plan that outlines the entire process and highlights the benefits of the new technology. This will help all stakeholders understand the purpose and advantages of the new technology, thereby increasing their support.

- Engaging all parties early on is also crucial. Teachers can provide valuable insights into how the technology can be integrated into the curriculum, and parents can offer suggestions on how it can be used to benefit their child's learning experience.

- And let's not forget the most important stakeholders—the kids themselves. With their love for change, they will embrace the new EdTech with open arms, leading to an overall positive experience for everyone involved.

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How does this translate to endpoint management

Carrying out an audit on the state of your device fleet can not only help identify areas for improvement but can also convince other stakeholders, like parents, teachers and school staff of the importance of implementing new systems and technologies.

"The greatest barrier to education technology is not the technology itself, but rather the lack of resources and funding required to implement and sustain it in the classroom."

Dr. Matthew Lynch, education writer and consultant.

5 Unreliable devices and software

When unreliable devices and software come into play, managing EdTech becomes even more of a challenging and daunting task. Just one student's device malfunctioning or encountering a bug could potentially disrupt the entire class' learning experience.

From malfunctioning notebooks to software glitches causing difficulties with test-taking or login issues, unreliable EdTech can have significant consequences. For education technology to fulfil its potential, it needs to be consistent and reliable.

The real challenge with unreliable technology is that it not only affects students' learning but also puts teachers in a difficult position, turning them into IT support staff. This is not the intended purpose of EdTech and can lead to unnecessary frustration and wasted time.

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Strategies to face this challenge

- Ensuring devices and software are dependable and consistent is critical to the success of EdTech. By doing so, we can empower students to learn and grow without any unnecessary interruptions or complications.

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- Implementing a structured and documented patch management strategy can make a huge difference. By controlling when patches are rolled out, you can reduce disruptions in the classroom and ensure all devices are up to date and secure. This approach gives schools more control over their technology, allowing them to focus on what really matters—teaching and helping students.

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How does this translate to endpoint management

Ensuring consistency across all devices and applications used in the classroom is of the upmost importance so every student can have the same experience, with the same operating system and applications that look and feel the same avoiding confusion and subsequent class disruption

6 Cyber safety & device control

As technology continues to advance, so does the risk of cybercrime in our schools. It's now more important than ever to have proper visibility and control to ensure the safety of students, their information and their devices.

With EdTech becoming innate to the classroom and education, parents are becoming increasingly concerned about the potential risks their children may face. Will the devices be used or abused? Could they be hacked and used maliciously? These are just a few of the questions and concerns keeping parents up at night.

IT teams must be vigilant in their efforts to keep all devices secure and up to date, regardless of where they are accessed from. This responsibility falls on their shoulders to ensure all students and staff are protected from the ever-present threat of cybercrime. By taking proactive measures, schools can create a safer learning environment for everyone.

Strategies to face this challenge

- As students increasingly access educational technology from their homes, it becomes crucial to maintain visibility and control over the entire fleet of devices. Remote device management emerges as an essential strategy for school IT teams to manage EdTech effectively.

- When school IT teams have effective remote device management, they attain a higher level of control, including the ability to restrict potentially harmful activities that might compromise cyber safety. By implementing strict admin privilege rules and limiting access to certain websites and downloads, schools can establish an effective cybersecurity approach that protects their students and staff.

- It's also crucial to keep devices up to date with the latest security patches. Automated patching emerges as a key workflow to ensure devices remain secure and protected against potential cyber threats. By implementing these strategies, schools can face the challenge of cyber safety and device control with confidence and safeguard their students' educational experience.

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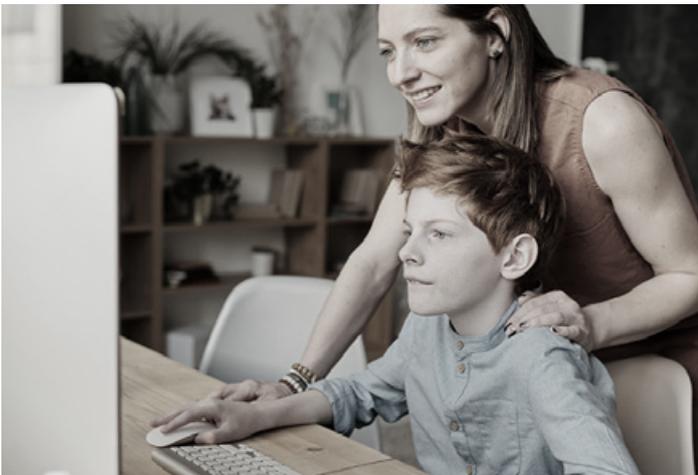
How does this translate to endpoint management

Desktops and laptops are the most 'at-risk' vector for security threats or breaches. Ensuring these devices are controlled and managed by the school with a system that automatically patches and deploys updates can significantly reduce the attack surface of the entire school fleet.

Strategies needed to face these challenges head on

The key challenges facing education technology and its successful adoption into schools include resource limitations, skill shortages, infrastructure and systems maintenance, and safety and privacy issues.

It is crucial for schools to overcome them to create a more effective and equitable educational landscape that encourages innovation and experimentation.

What all the strategies put forward have in common to tackle these barriers and difficulties head on are workflow optimisation, processes automation, tapping into the knowledge and experience of professionals, providing targeted training and resources to staff, parents and students, and raising awareness and understanding on cybersecurity within the community.

By embracing technology, having effective device management and implementing the necessary strategies, schools can unlock the full potential of EdTech.
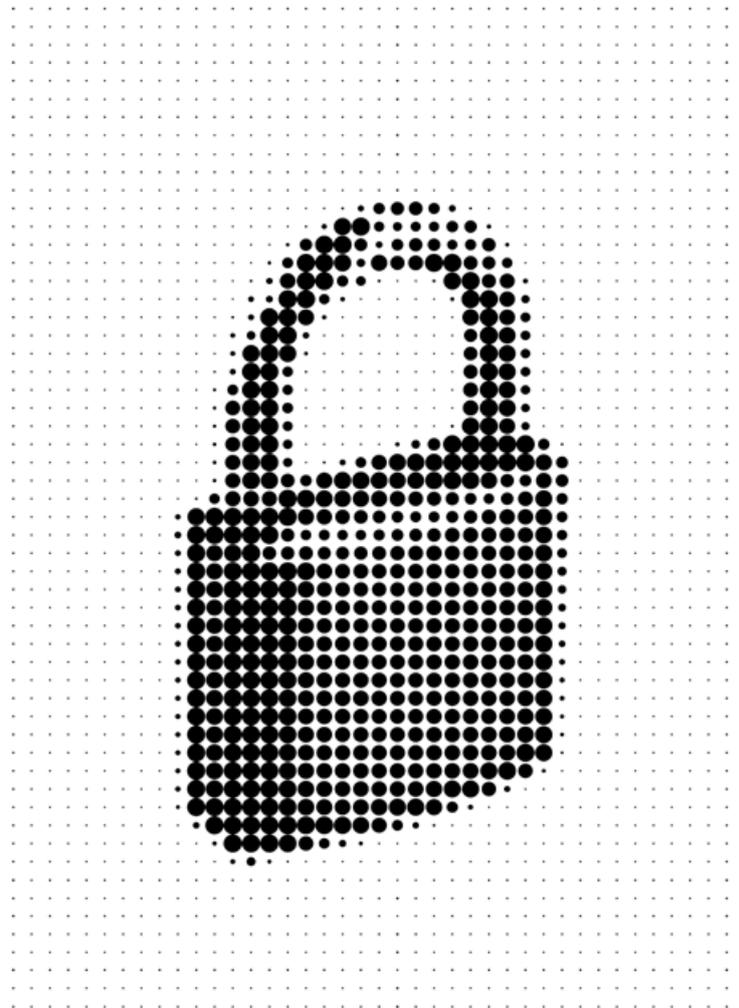
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