THE NEW SCHOOL:

HOW EDUCATION CAN NAVIGATE NETWORKING AND TECHNOLOGY

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COMMSCOPE

Better learning outcomes through technology

Everyone agrees that education sits at the heart of the essential functions a society needs. It's what we invest in to make tomorrow possible – and, to the extent that parents work to give their children better futures, it's one of the main things that a lot of everything else we do is ultimately for.

Because it's so fundamental, though, we too often think of education as something that never changes. In particular, it gets seriously overlooked as a place of innovation and evolution as the world around it becomes ever more digitally-driven.

The truth is that schools have often been at the forefront of putting people in touch with emerging technology at a pivotal moment in their lives, from investing in microcomputers early in the PC revolution to training young minds in online safety as social media and ecommerce became default ways of interacting with the world.

And today, the relationship between education and IT is changing again. Not so long ago, technology education was generally siloed into specialised classes and rooms, while for the rest of the institution IT was, like plumbing or electricity, a background pre-requisite that makes teaching possible.

Now, the educator's mindset is moving towards one in which IT is not just infrastructure, but a vital and active player in delivering all-important learning outcomes. Anticipating professional and personal lives where fluency with technology will be the defining predictor of success, the digital component of learning now needs to be as baked into education as literacy and numeracy.

Staff are looking to these figures to help make their pedagogical use of technology truly engaging, additive, and reflective of their students' realities. The new generation of IT leaders, for their part, have no shortage of innovative options for learning available to them, from esports to new media suites to IoT networks to AI enablement.

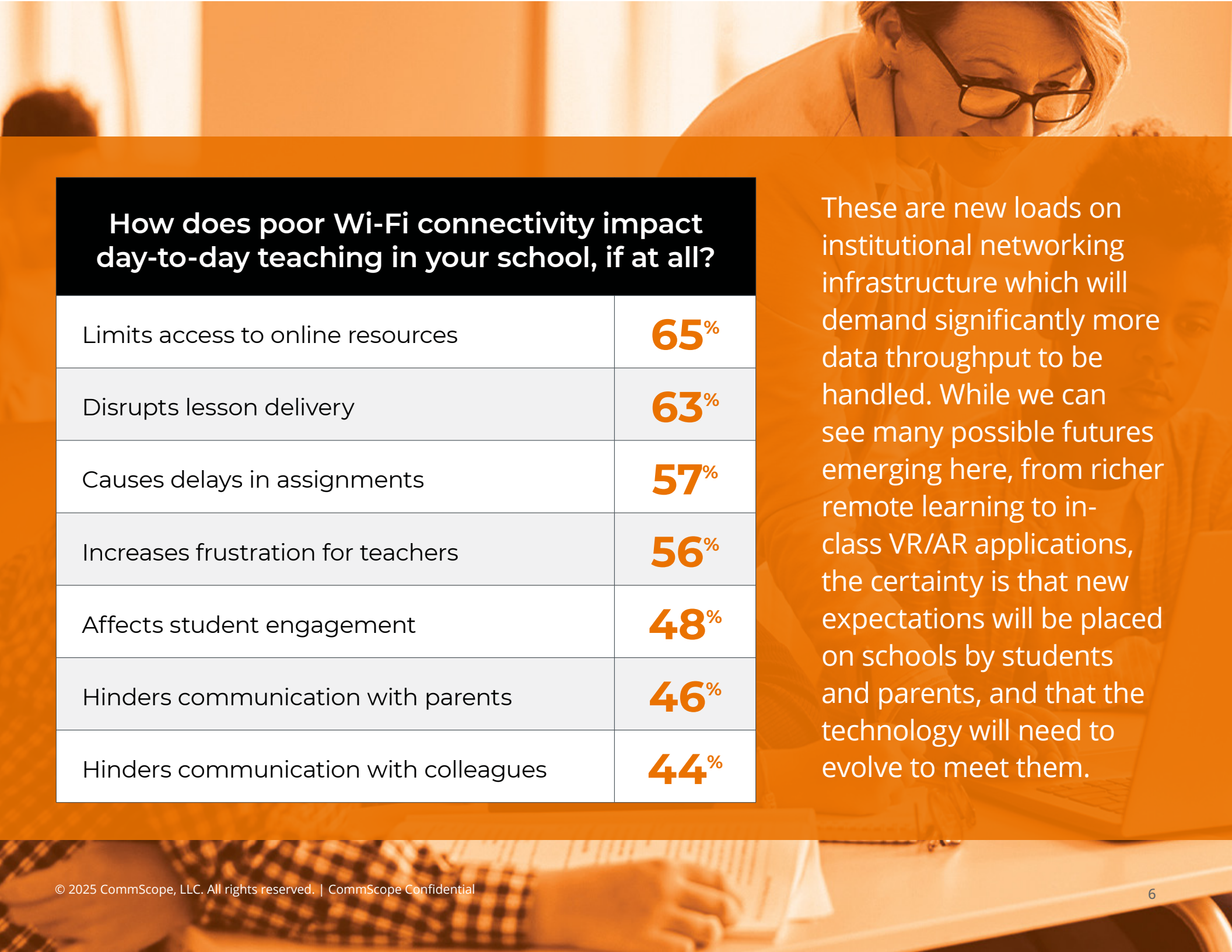
The challenge is that all of these futures – and whatever new innovations schools find themselves leaning into tomorrow – rely on robust, flexible underlying IT infrastructure. In particular, as more data-intensive applications become typical in teaching, school Wi-Fi networks need to be able to keep up. That leaves IT leaders playing at both ends of the field, delivering improved essentials and introducing new teaching possibilities.

To learn more about what is powering IT advances in education, we commissioned a survey of UK school leaders asking about their approach to Wi-Fi. In this ebook, we will explore the concerns and opportunities that face them, and how education will navigate the coming years.

What Wi-Fi means for schools today

Of course, Wi-Fi has been part of the fabric of a school building for a long time, and institutions might well be on their third or fourth generation of equipment since the technology first became widespread. What is clear from talking to educational leaders, though, is that just the presence of wireless connectivity isn't enough: in modern schools, high network performance is critical.

That's because what Wi-Fi now enables for education is the in-the-moment learning experience – and when it fails, the work that it enables is not something that can wait. When our respondents were asked about the impacts of poor connectivity, it's unsurprising that more administrative tasks like teacher-parent communication ranked highly. By far the biggest damage, though, is to lessons in real time: more than ever, when the internet stops, so does the teaching.



How does poor Wi-Fi connectivity impact day-to-day teaching in your school, if at all?	
Limits access to online resources	65%
Disrupts lesson delivery	63%
Causes delays in assignments	57%
Increases frustration for teachers	56%
Affects student engagement	48%
Hinders communication with parents	46%
Hinders communication with colleagues	44%

These are new loads on institutional networking infrastructure which will demand significantly more data throughput to be handled. While we can see many possible futures emerging here, from richer remote learning to in-class VR/AR applications, the certainty is that new expectations will be placed on schools by students and parents, and that the technology will need to evolve to meet them.

Security, safeguarding, and safety

Any institutional networking system comes with questions of security. Any doorway out to the world, after all, is also a potential entry point.

For schools, where student safeguarding is an unbreakable first priority, such questions are perhaps more pressing than in most organisations. Where schools rely on third-party applications to deliver on safeguarding requirements, those need to be integrated into the network in a highly secure and robust way in order to be fit for purpose.

They also need to be able to meet very specific demands in their approach to security and privacy – for example, by keeping a certain student's personal details out of general circulation in order to protect them without limiting their interactions with teaching and learning.

It's therefore no surprise that, when thinking about challenges and concerns, school leaders point to security as their number one issue.

What challenges or concerns do you have regarding the adoption of Wi-Fi as a Service in your school?	
Security and data privacy	56%
Lack of control over infrastructure	42%
Vendor reliability	38%

At the same time, there needs to be a broader view of safety and resilience attached to Wi-Fi in educational settings. As schools become more digital-first in their approach, failure modes in their technological infrastructure have more severe consequences, and control and reliability are also key concerns for this reason.

For instance, we are increasingly seeing internet of things (IoT) tools being introduced to classrooms. Connecting things like heating and lighting doesn't just allow for more cost-efficient and sustainable operations, but also enables innovations like air-quality monitoring which can identify high CO2 concentrations which are directly linked to student attentiveness and performance. Innovations like these are exciting steps forward – which also make institutions more reliant on a truly reliable network.

Here, school IT leaders are approaching an increasingly complex infrastructural task, with technology environments becoming broader and more diverse, even as their resources for that task are diverted towards those more strategic questions of teaching and learning.

The answer is to change how the network is managed. In particular, the same developments in AI which are shifting the educational experience for students can also work, in the background, to ensure that those experiences (and the business processes which also rely on networking) are secure and uninterrupted.

RUCKUS AI, for instance, is built into our latest generations of networking hardware to improve network management and optimisation. It offers advanced security features to safeguard sensitive data in a granular and flexible way, meaning that unique student needs can be met while also upholding compliance with data protection regulations. It also provides proactive insights and issue detection to help schools to optimise and fix networking environments before users experience problems.

Positioning schools for effective investment

The move towards making IT leadership a more strategic, learning outcomes-focused role in education is being driven by multiple factors.

One is simply the fact that, in a significant way, new possibilities in technology are currently rapidly emerging for schools – and that opens a new front on which schools need to ensure that they are modern, up-to-date, and attractive. Another is that students' personal experience of life is now so influenced by technology, and schools have to keep up in order to engage them.

But we shouldn't overlook the ways that technological progress can be a real expansion of the educational experience, as well as upholding the standards and outcomes that schools have always set for themselves.

For instance, one exciting development in recent years has been the introduction of eSports suites in some schools. These advanced, specialised spaces tap into a student demand, and also provide valuable outcomes around team integration and leadership that might not previously have reached some students through traditional physical education.

Technology can likewise be a new way into the arts through podcasting and modernised performance spaces. It can enable new learning styles through interactive and virtual environments for students who might otherwise struggle with traditional pedagogy.

In short, IT leaders have an opportunity to help raise the floor, as well as the ceiling, of a school's attainment record. But all of that, of course, means investment – and while we are seeing a spike in options for school IT, operational budgets are rarely so flexible.

It is no surprise, then, that the biggest financial concern around IT services is not budgetary limitations as such, significant though they are. It is ensuring those budgets are effectively managed over time.

What are the primary factors influencing your decision to choose Capex over Opex, or vice versa, for ICT services?	
Predictability of costs	33%
Long-term vs. short-term needs	31%
Risk management and security	30%
Impact on cash flow	30%
Budget constraints	29%

Between the need to create space in capital budgets for new tools and the pressure to rigorously plan long-term spending, schools are increasingly moving, where possible, from periodic ‘big bang’ IT upgrades towards a subscription basis, spreading the cost of infrastructure more evenly across its lifetime.

For Wi-Fi specifically, an as-a-Service model offers additional benefits to schools, including simplifying procurement by working through a managed services provider and helping the institution to keep pace more effectively with evolving technology. And, just as much as the educational experience is being changed by technology, the technology that now powers it is itself changing, fast.

Conclusion:

The new school of Wi-Fi solutions

Today, for a school leader tasked with navigating the next steps towards digital-first learning, establishing the right priorities is no easy task. The teaching community is looking to them to make hypothetical, and much-needed, advantages of new technology a reality. At the same time, the realities of often-aging physical networking architecture need to be addressed. Indeed, reliability is by some distance the key benefit that our respondents would look for in a new Wi-Fi solution.

What are the main benefits, if any, you could see in adopting Wi-Fi as a Service for your school's ICT needs?	
Predictability of costs	33%
Long-term vs. short-term needs	31%
Risk management and security	30%
Impact on cash flow	30%
Budget constraints	29%

The right move, then, is one that secures and strengthens the performance that a school needs today while also setting the scene for the growth and change that schools will need to bring about in the coming years. On this front, it is important to know about Wi-Fi 7.

Wi-Fi 7 is the latest Wi-Fi standard, and in many ways it represents the biggest shift in capabilities for Wi-Fi in a long time. Headlines will focus on the top-line speed figure: at over 40 Gbps, peak rates will be over 5x faster than what Wi-Fi 6 can deliver under ideal conditions.

Equally important, though, are a range of improvements in how devices connect to access points. Better management of network interference and capabilities around coordinating multiple parallel links between a device and the network mean

that connections have the potential to be significantly more robust than previous generations, while also enabling the near real-time communication that applications like gaming and VR require.

And, utilisation of a new section of the spectrum contributes to Wi-Fi 7's scalability, giving it headroom to accommodate rapidly growing wireless IT estates with more users and more simultaneous data transfer – including AI and IoT related traffic – without becoming congested.

From an educational point of view, then, this is an important moment to take a hard look at a school's approach to networking, making sure that the ingredients are in place to adopt new ways of teaching in an effective and efficient way. And from a technological point of view, this is the best moment in a long time to initiate a step forward, to take advantage of a new wave of devices which will change, in a meaningful way, what Wi-Fi is capable of delivering.

To learn more about what your school might be able to achieve with Wi-Fi 7 delivered as a service underpinning your IT environment, get in touch with a RUCKUS expert today.

About this data

RUCKUS commissioned a survey of 100 UK school leaders with OnePoll, a leading market research firm registered with the MRS and the BPC. Our respondent pool included 100 UK school leaders, including headteachers, deputy headteachers, bursars, IT managers and IT directors in multi-academy trusts, independent schools and state schools.

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