

Research Report

The road to digital learning

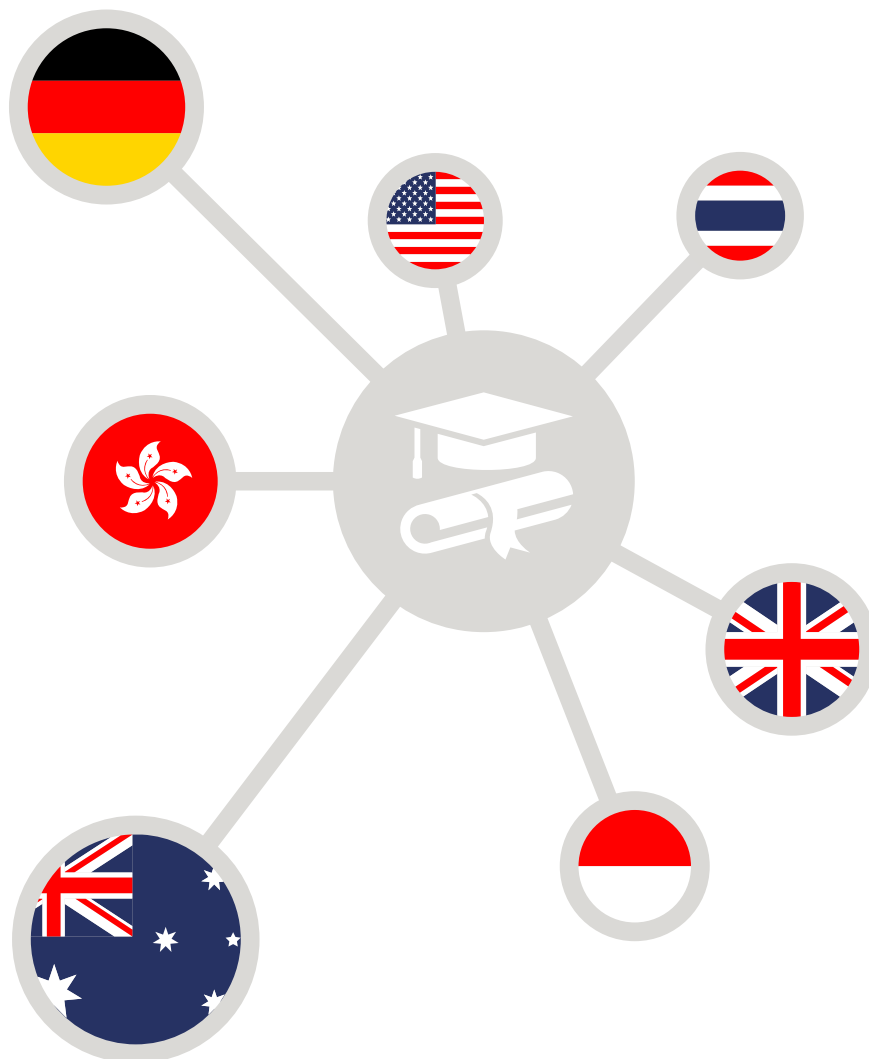


shaping tomorrow with you

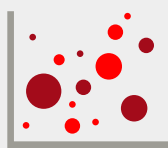
Preface

Welcome to our latest research report, where we're exploring the challenges, opportunities and priorities in education establishments around the world.

We spoke to over 600 IT leaders in a mix of schools, colleges and universities from seven different countries. They revealed where their digital ambitions lie, and how far away their dreams are from their reality.



The research revealed that:



Digital learning and fully embracing innovative technology is much sought after by all in education, but for many, this is an aspiration – not a reality.



IT budgets – for the majority – are either staying the same or increasing, and teams are mainly investing at a foundation, practical level.



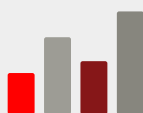
IT departments are relying more and more on business cases and provable ROI when it comes to investing in IT.



Digital literacy is quite low among teachers, and education establishments face challenges with “teaching the teachers”.



Poor connectivity and unsuitable and flimsy devices challenge IT departments, as does trying to find the right mix of devices, infrastructure and apps.



The main priorities for schools, colleges and universities around the world are balancing levels of access and security, and improving staff digital competency and the reliability of devices .

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Education
around the world

Getting ready for a digital future

What do we mean when we say...

This study spans the world. And the words we use to talk about education, and how we group students, changes from country to country. So, here's a small glossary of the terms we'll be using in this report.

- » **Primary school:** children aged 5–11
- » **Secondary school:** pupils aged 11–18
- » **College/further education:** students over 16
- » **University/higher education:** students over 18

Digital is infiltrating everything. From country to country, no part of society is left untouched. And education is no different. Digital learning paints a picture of personalized learning and tech-filled classrooms. But how close are we to this?

Well, education is undergoing a complete revamp. Teaching methods are changing. Infrastructure and devices are being replaced.

Slowly but surely, this change is happening. Governments across the world are spotting the digital gap, and are trying to fill it. Germany's DigitalPakt#D, Australia's Digital Education Revolution, the UK's ICT-focused curriculum, and the Thailand 4.0 policy, are just some examples of the growing support.

Technology is now more than a fun side-note – more than a 30-minute treat once a week. Teachers are incorporating it into lesson plans. And as more and more children enter the education system already able to use technology, schools must be ready to build on this native skill, and prepare them for a future where digital reigns.

We wanted to discover what the real state of digital education is. We all know that personalized learning and digital classrooms is the dream – but how close is our reality? What do IT leaders in education think? Where are they spending money, and what are they prioritizing?

So, we compiled this research to answer these questions.



About the research

Alongside our research partner, we spoke to 602 IT leaders in education establishments across the UK, the US, Germany, Australia, Hong Kong, Indonesia and Thailand, at the beginning of 2017.

We asked them their views on the current state of digital in their education establishments. We found out where they are now, and where they plan on taking their IT.

They gave their opinions on everything from augmented reality to attitudes towards digital. They've told us their main challenges, and explained their ideal solutions. And above all, they've given us a window into how education is adopting digital – and why progress isn't as fast as some think it is, or want it to be.

A snapshot of the participants



Where are we now?

Personalized learning is the end goal. But education isn't quite there yet. The focus is still on putting the foundations in place: **97%** of IT leaders want to balance levels of access and security, and **88%** want to improve their staff's digital competency.

Talk of personalized learning, automated services and other tech solutions are low priority for some – only **35%** regard provisioning cloud-based learning as a significant priority.

The reality is that most establishments are struggling with complex tech changes, with limited resources, with the mix of devices, and with the digital competency of personnel.

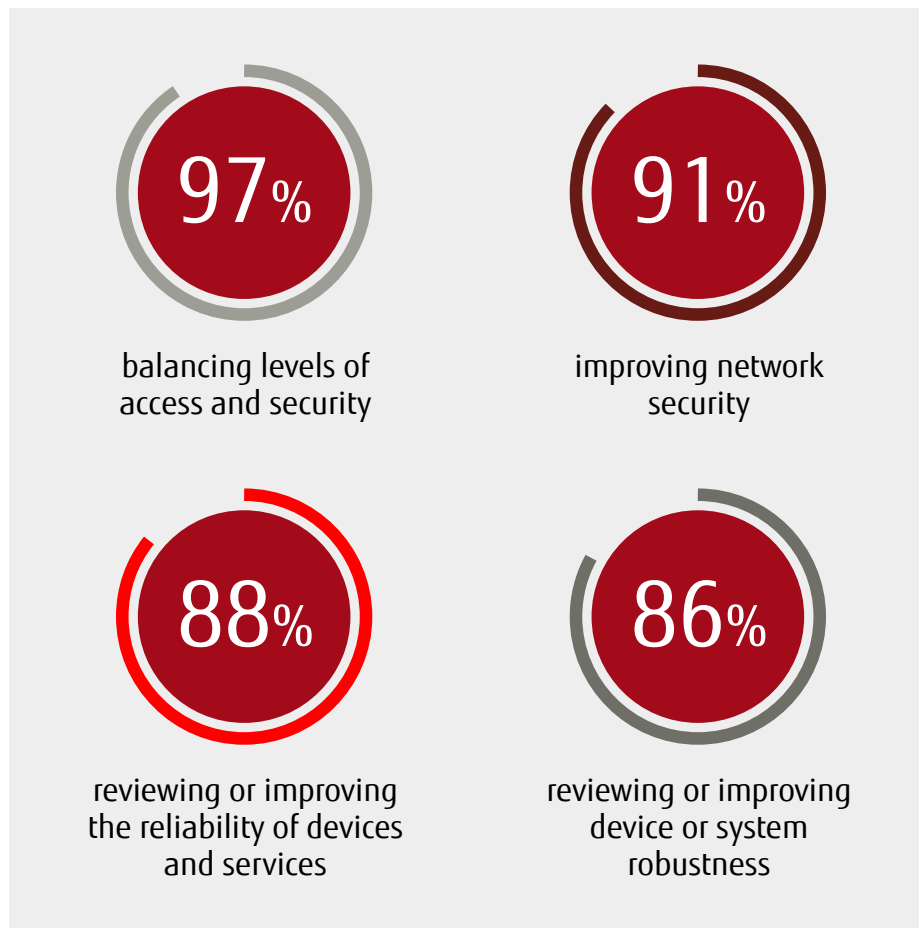
But this doesn't mean digital education isn't wanted. **94%** want personalized learning. Just not all are ready for it yet. For now, education must concentrate on getting the basics in place, before it can adopt more sophisticated digital learning technology.



Putting the right foundations in place

When you've got big ideas, it's easy to get carried away. But in education, people are happy to walk before they can run. IT leaders in the seven countries we spoke to want remarkable things from digital – but they're putting the foundations in place first.

Top priorities for IT leaders in education



Before any grand visions of automated classrooms and personalized learning appear, the education sector needs to ensure they have the **right connection**, a **secure network** and **simple, robust devices**.

It's these three elements that make up the foundation of digital learning.

Is the speed of progress starting to lag?

The IT leaders we spoke to are keen to embrace digital: **77%** want to be digital centers of excellence in the next five years. But achieving this won't be easy. Limited IT resources holds **54%** of departments back. And **51%** struggle to keep up with technological change.

Only 50% of our IT leaders think their Wi-Fi is good enough to support their digital learning aims.



Having excellent, fast Wi-Fi is vital in education. It's not just a case of being irritated by slow loading webpages and buffering videos. **61%** say it's needed to create a flexible learning environment, and **56%** say it improves their students' learning experience.

Areas IT departments invested in over the last 12 months:



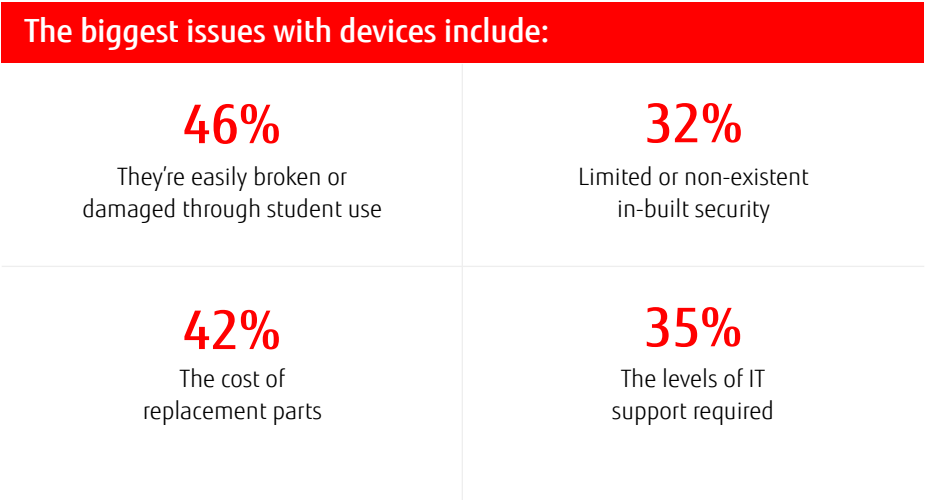
Percentage of IT leaders who want to:

- 97%** Balance levels of access and security
- 88%** Review or improve the reliability of devices and systems
- 86%** Review or improve the robustness of devices and systems
- 80%** Move to higher speeds or the latest standards in Wi-Fi

Devices that don't crack under pressure

Education establishments are one of the most unforgiving environments for technology. From cracked smartphone screens, to laptops and tablets hurled around in rucksacks, devices are put to the test.

And a lot of the time, they aren't standing up to it. Only **46%** of IT leaders think they have the best possible devices to support their digital learning goals.



Choosing devices isn't a vain attempt to deck schools out in cool technology. It's more than just having a popular brand in your classroom. **82%** of our respondents believe that giving students high quality devices positively affects their learning experience and results.

It's one thing to know that you need great devices and fast, reliable connectivity. But it's something else entirely to actually find them.

65% of IT leaders find it difficult to get the right mix of devices, infrastructure and apps to drive the best learning outcomes.

And while IT departments want to adopt the best and latest technology, complexity can scupper this desire. **55%** of respondents said if they understood where best to invest, they could accelerate digital learning progress.

34% lack in-house expertise to deal with increasing complexity.

31% are stopped by the need for training and support.

Closing the digital literacy gap

Education isn't just about reading, writing and arithmetic anymore. It needs to give students the tools and skills to survive and succeed in a predominantly digital world. And this is the catalyst for major change. Education establishments are updating their curriculums. Governments are updating policies and requirements. And teachers are having to learn new skills, and teach in new, different ways.

While many programs and policies are in place to help digital take a bigger role in education, there's one major challenge: digital literacy.

Not all teachers and members of staff are comfortable with using modern technology. Many will have spent decades in the classroom, armed with nothing more than paper, pens, and a chalkboard. So, bringing in new tech can be daunting – and sometimes met with hostility.

78% of our respondents said the level of technical competency varies widely across their teaching staff. And **34%** say one of their key challenges is digital competency in staff and teachers.

84% of our respondents say they have a duty to prepare their students for a digital future

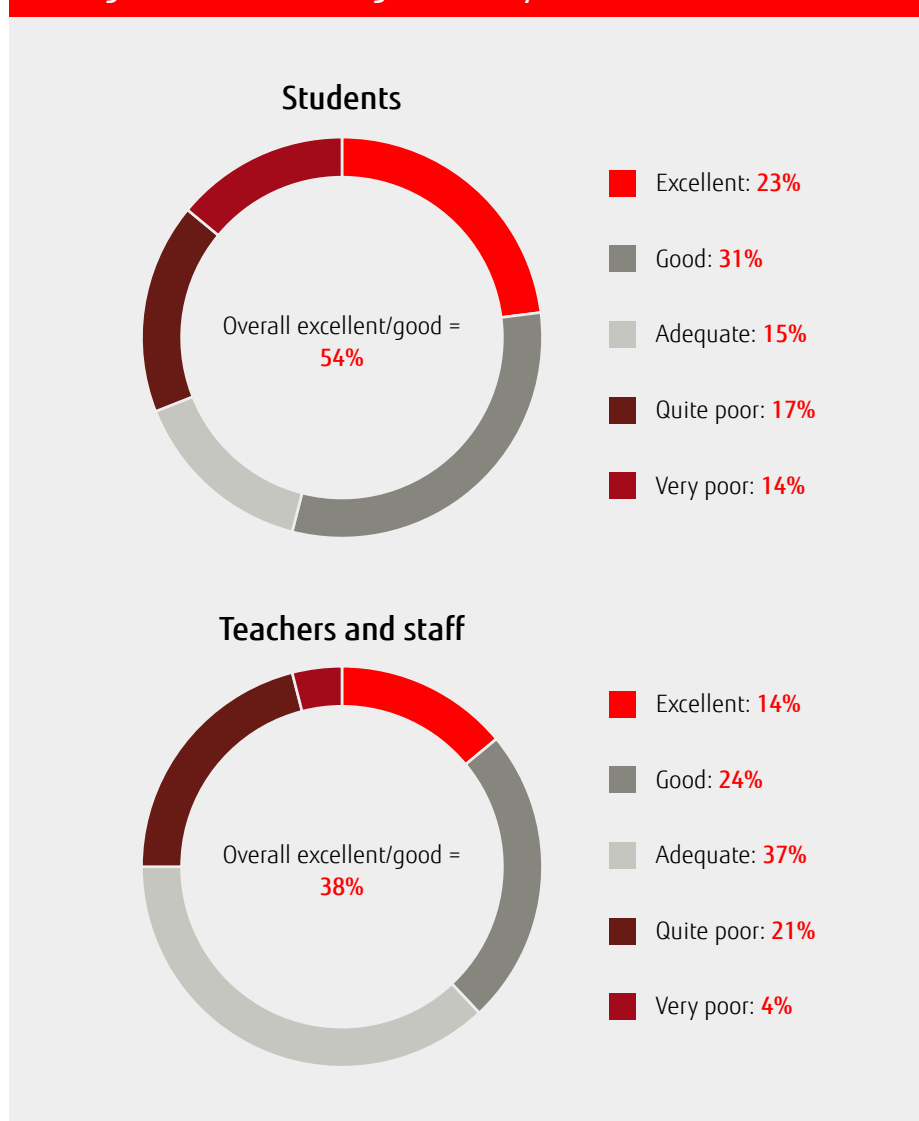


Is digital causing a role-reversal?

It's not new that children are using technology at younger and younger ages. Even studies from 2013 report that **70%** of children can confidently use a laptop, smartphone or tablet before they start school. And these digital natives are sometimes more skilled at using technology than their teachers are.

If digital learning is going to succeed, teachers need to be tech-savvy. They need to be confident and comfortable with integrating digital into their classrooms and lesson plans.

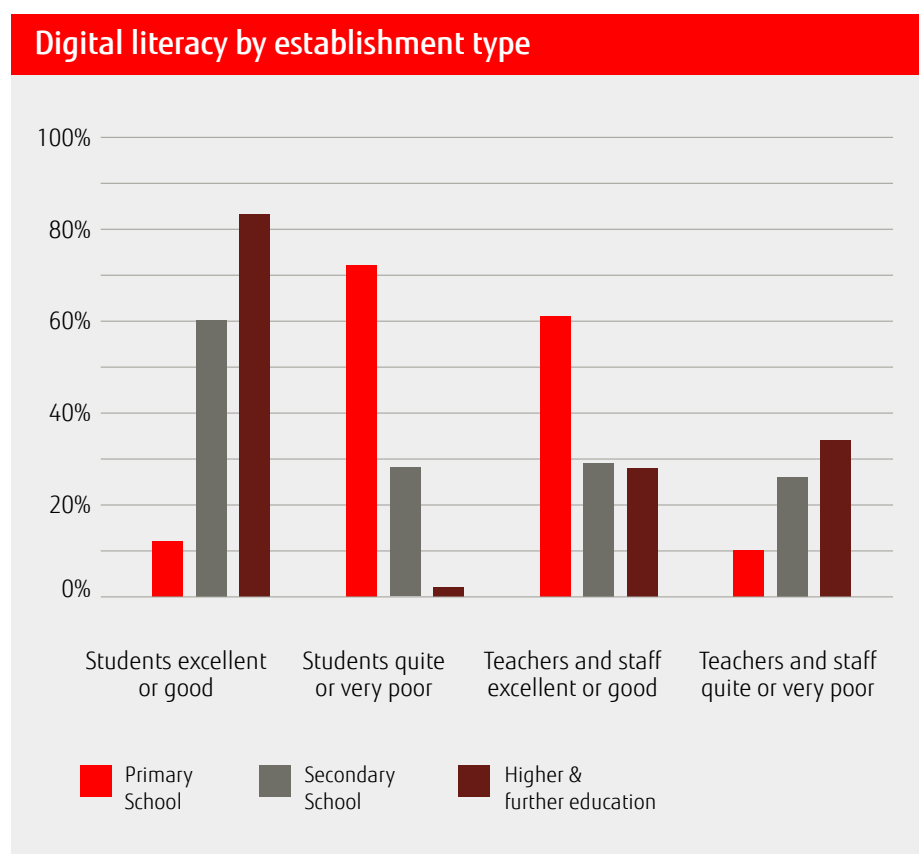
Rating current levels of digital literacy – overall



54% of students achieving an excellent or good status might not seem ground-breaking. And **31%** of students rated as poor is quite a surprise, when you think of all the hype around digital natives. But when you break it down into establishment type, the figures become starker. For example, we can't expect children of primary school age to have excellent digital literacy. And only **12%** are at this level.

But when you look at higher and further education establishments, the danger of the digital literacy gap becomes clear. **83%** of students are excellent or good, while only **28%** of teachers are. And while only **1%** of students are quite or very poor, **34%** of teachers are.

So, how can teachers give their students the skills they need, if they themselves aren't always comfortable with the technology used?



Giving teachers the support they need

When we asked our IT leaders what factors – excluding funding – would accelerate their digital learning progress, 49% said improving digital competency in their teaching staff.

And when 79% say that teachers and staff learn best from one another when it comes to tech, it’s clear to see how we can close the digital literacy gap. By using teacher-leaders and peer support.

61% have teacher-leaders in place to support the adoption of devices and integrating technology into the classroom, while 30% plan to implement this in the next 12 months.

	Primary School	Secondary School	Higher & further education
Have teacher-leaders	56%	62%	66%
Plan to implement in next 12 months	33%	29%	27%

If teachers get the training and support to explore and use new technology in the classroom, their students will be ready for whatever the future brings.



Making a case for digital learning

It's all well and good saying that education needs better devices, stronger connectivity, and more support. But when it comes down to it, it all costs money. It's more 'must-haves' to add to your budget. And in countries all over the world, funding is still a challenge.

55% of our respondents say their key barrier to updating devices is lack of funding and limited budgets. And while **82%** of the institutions surveyed have either seen their budgets increase or stay the same, money is never easy to find or easy to spend.

So, what's the answer?

Building a business case

It's not enough to give bland reasons and vague points. Now, when budgets are tight and money is scarce, you need a business case. **84%** of our IT leaders say it's important to build one to secure technology funding.

Include heavy-hitting statistics and facts, and plenty of proof points and case studies. If you can back your claims up, you're far more likely to get the funding you need.

But **77%** say they need support or advice to do this. And **59%** think it's more difficult to do this now than two years ago.



Raise the bar with ROI

Part of a solid business case is proving your devices have a good return on investment (ROI). It's true, you could spend a minimal amount of money on new laptops – but if they only last a term, no one will be happy. **85%** of our respondents say that ROI is now more important for items like laptops and tablets than it was two years ago. And **39%** say that being able to show ROI on tech investments is a key factor in accelerating digital learning progress.

If you can prove that your investments are worth the money, you're onto a winner.



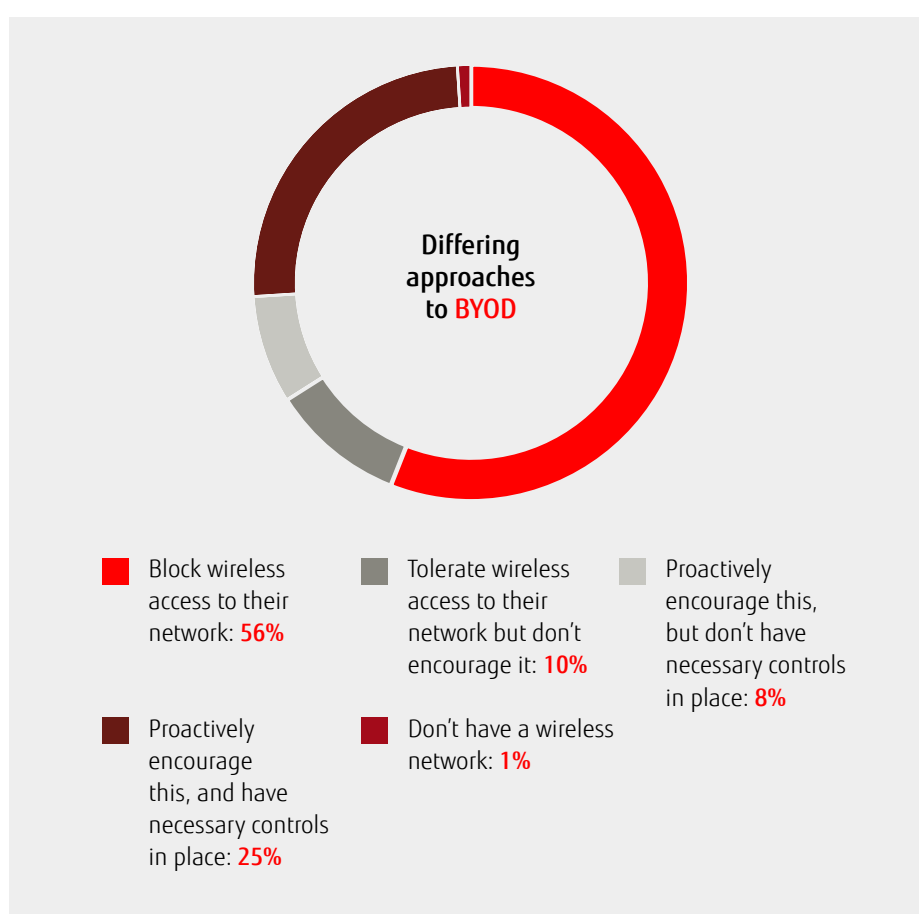
What our IT leaders say are the most useful factors to include when showing ROI on devices



- 55%** Teacher engagement and feedback
- 54%** In-built security
- 51%** Energy efficiency
- 50%** Easy and intuitive to use
- 49%** Devices are tough/robust

Could BYOD be the answer?

When budgets get tightened or funding gets delayed, what can you do? **70%** of our IT leaders say that due to limited budgets, they encourage students to use their own devices on site. And as **73%** feel their students have access to better devices at home, this isn't a bad move. A bring your own device (BYOD) strategy could give students the chance to use their own high performing devices in an education environment. However, it raises many issues around security and management.



But even a BYOD route has its own set of challenges. While **38%** say that one of their key priorities is upholding their duty of care by monitoring what their students access, only a quarter have the necessary controls in place to do so.

BYOD can be the answer, if education establishments have the necessary security and monitoring in place. But if not, it can cause more issues than it solves.

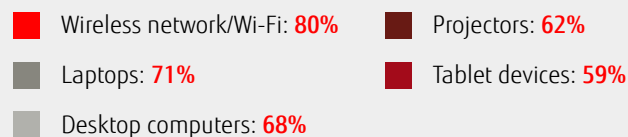
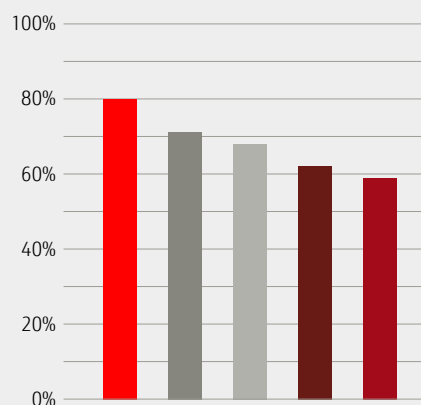
Investing in the practical, aiming for the aspirational

Most schools, colleges and universities around the world are ready to start spending. 82% of the IT leaders we spoke to said their IT budgets have either stayed the same, or increased between 2016 and 2017.

Practical investments, aspirational thoughts.

Key investments over the last 12 months:

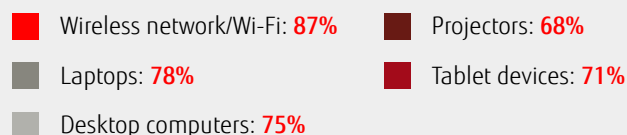
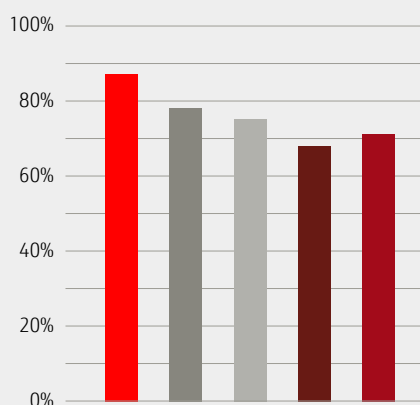
Over the last 12 months, **80%** of our respondents invested in Wi-Fi. **71%** invested in laptops, and **68%** in desktop computers. These purchases show that education establishments are still concentrating on the practical. And these investments align with priorities over the next 12 months: **97%** want to balance levels of access and security.



Practical investments, aspirational thoughts.

Areas establishments want to invest in, over the next 12 months:

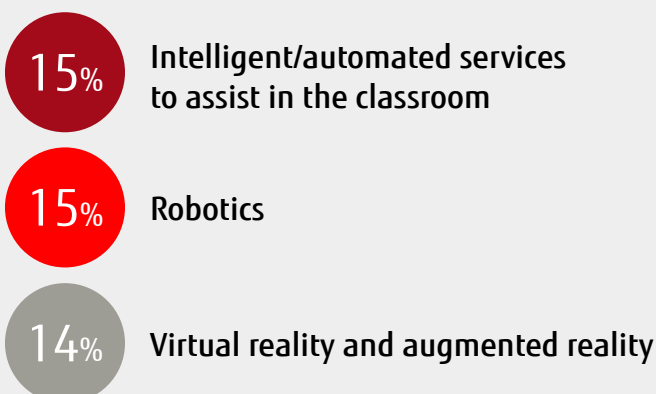
Securing the foundations of digital learning is still in progress in schools, colleges and universities around the world. And this is part of the long game. Looking forward to the next 12 months, all still want to invest in similar areas.



But they aren't just focusing on the practical. We know that **77%** want to be regarded as a digital center of excellence in the next five years. And slowly but surely, these aspirations are becoming a reality.

There's a small but steady growth in investing in more exciting, adventurous digital solutions.








Areas where establishments have invested in the last 12 months, or plan to invest in the next 12:



The same story, the world over

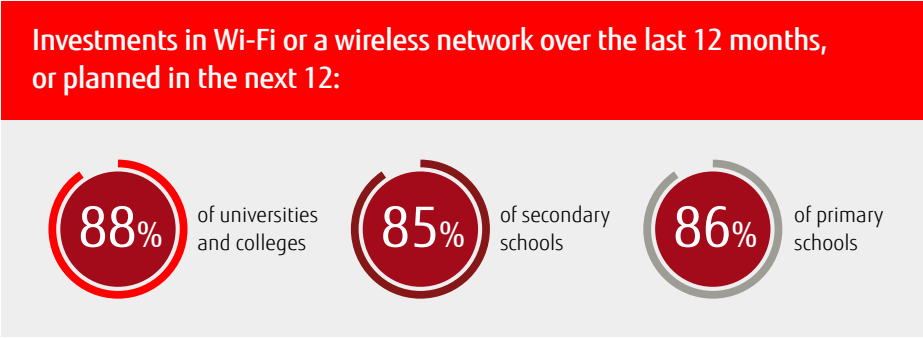
Schools, colleges and universities around the world are all telling the same story when it comes to IT investments. While the details differ slightly, the main consensus with all countries is the same: they are mainly investing in network access and finding the right devices.

Here are the top three areas that schools, colleges and universities have invested in over the last 12 months, or plan to over the next 12:

	US	84% Wireless network/Wi-Fi	82% Laptops	75% Cloud-based networks
	UK	81% Wireless network/Wi-Fi	78% Laptops	70% Tablets and desktop computers
	Germany	85% Wireless network/Wi-Fi	82% Laptops	73% Projectors
	Australia	90% Wireless network/Wi-Fi	84% Laptops	73% Desktop computers
	Hong Kong	90% Wireless network/Wi-Fi	82% 2-in-1 devices/ notebooks	79% Tablet devices
	Thailand	90% 2-in-1 devices/ notebooks	90% Projectors	88% Desktop computers
	Indonesia	96% Wireless network/Wi-Fi	82% Desktop computers	88% Laptops

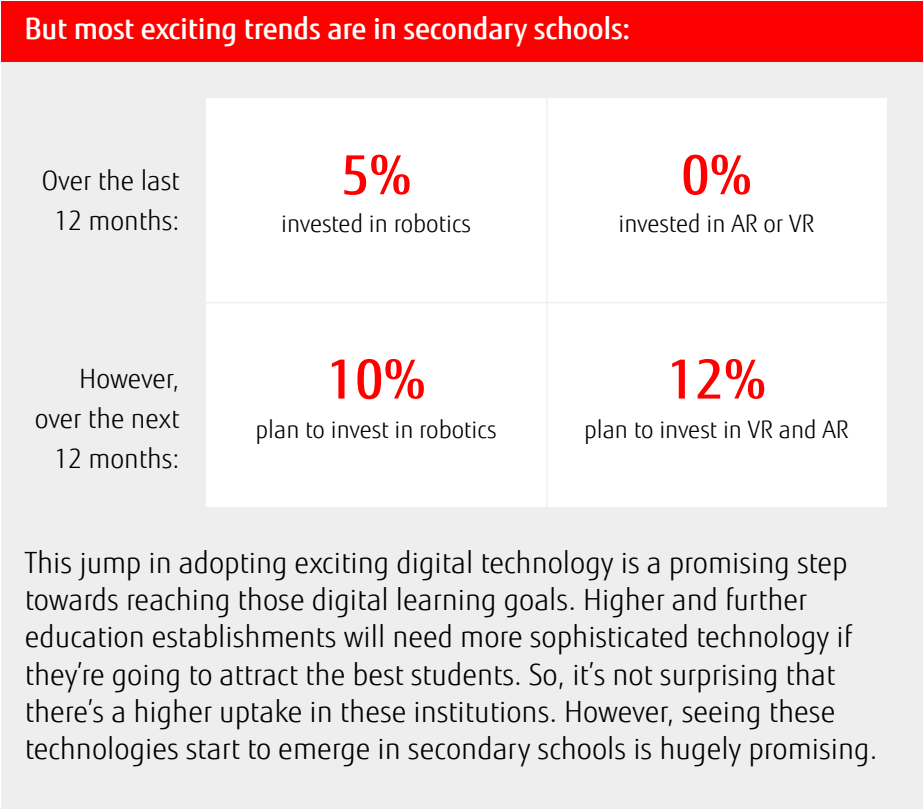
But does this change according to age?

When it comes to breaking this down across establishment type, many IT investments are practical. The top investment across all three establishment types – university and college, secondary schools, and primary schools – is Wi-Fi.



Despite investment areas being at a foundation level – devices and Wi-Fi – we’re seeing an increasing adoption of futuristic technologies. This is most prominent in universities and colleges, with 21% having invested in, or planning to invest in virtual reality (VR) and augmented reality (AR). And 22% are doing the same with robotics.

In primary schools, these figures are much lower. Only 8% plan to invest, or have invested in AR, VR, or robotics.



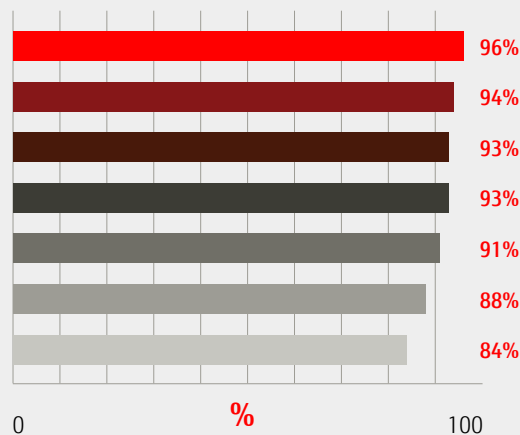
Education in the future

Reaching digital excellence won't be a walk in the park. In fact, it's going to be more like tackling a thousand-piece puzzle. Before we can reach the big picture, there's hundreds of boxes to tick, and a foundation to build.

Schools, colleges and universities around the world know that technology is vital. **88%** say that it has a key role in creating opportunities to learn that are available to all. And **92%** say their leadership team is focused on digital learning and using technology to support the learning experience.

Aspirations are high, and schools want to be digital.

77% want to be regarded as a digital center of excellence in five years, and **94%** think that personalized learning is very important to a child's education.



Percentage of establishments with leadership teams focused on digital learning:

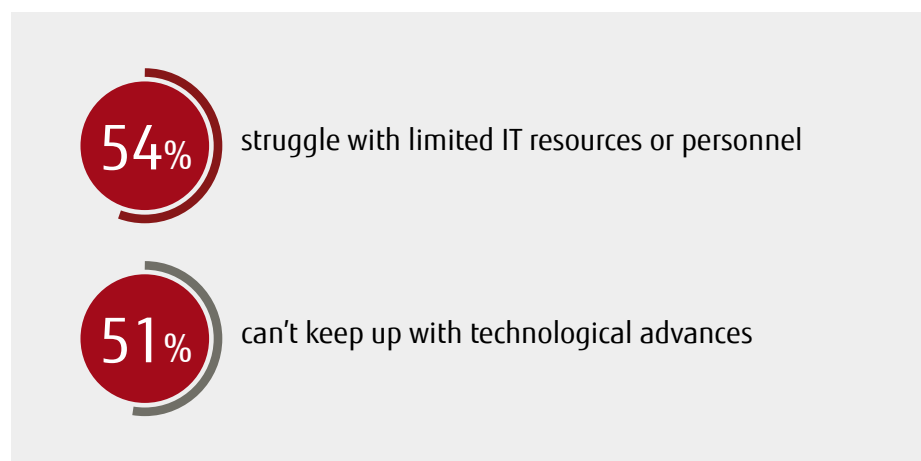


What digital learning approaches are important?



Overcoming challenges

IT departments around the world face similar challenges



But these challenges aren't the end of the world. They aren't permanent blocks. They're easy to overcome, with the right support and knowledge.

So, if you can build business cases, if you can prove ROI, if you can improve digital literacy, if you can update infrastructure and devices – then you can move onto the next step of the digital learning ladder.

Creating a new world for education



Ash Merchant
Director of Education,
FUJITSU

Ash Merchant has 25 years' experience in IT and its role in education. He's advised multiple government bodies. And he's earned a Tech4Good award for his work helping children with disabilities get online. At Fujitsu, he leads our education strategy. This includes our Education Ambassador program, which puts world class IT in the hands of students. So, they can foster the digital skills that are key to our economy.

Everyone in education says they want to start—or continue on—their digital journey. And they're all aware of how digitally literate their students are. But many people struggle to understand and define their journey—let alone know where to start.

Digital is affecting all levels of education, thanks to children using technology from a young age. Gamification from very early ages is an example of this, as are learning apps for numeracy that are embedded in learning and play toys.

This is having a large impact on young people's expectations of what education should be like, from when they first learn to read, to when they leave with their qualifications. However, this puts enormous pressure on those who teach in traditional classroom environments. They have to embrace the curriculum and expectations of education. Then they must combine this with their students' expectations, many who want to learn with new tools, and develop skills that will set them up for the future.

So, our young people are digitally ready. But are our institutions ready to deliver?

Technology is the enabling factor for education. It must be robust, reliable, secure, sustainable, progressive, adaptive, resilient. And ultimately, it must meet the needs of students and staff. Personalizing learning is a need, not a desire. To deliver this, establishments must balance a number of key factors—the first of which is having the right infrastructure in place.

Helping teachers get the training they need

It's easy to say that we need to invest in devices and technology, and the findings show this is needed. As tech moves at such a rapid rate, we have to make sure teachers and staff are comfortable and capable of using these devices and systems.

By making technology accessible to all within education, and helping to boost confidence, establishments will see a fundamental change. For example, in the UK, we've helped to give schools and colleges the technology they need to improve their students' learning experiences. In these institutions, we've seen student progression soar. And, teachers have grown in confidence too.



If all teachers had support and training around new technology, they could improve learning, increase efficiency and communicate better with their students. Then, their schools would embrace a digital environment without even realizing it.

Building budget-securing business cases

At Fujitsu, we work in partnership with our customers. One of the main benefits of industry collaborating with education, is that we have access to this vast set of resources and skills. This, if channeled and used proactively within education, has a huge benefit.

Sharing knowledge and best practice across establishments is the foundation of success. One example is a primary school in the UK that didn't know which infrastructure to invest in. With the support of a digital college, they were able to choose the right system for their needs. We have many school leaders asking for our support, to help them deliver more innovative technologies.

We know, through our work in education, that all establishments are at different stages of the journey. For some, it's as simple as ensuring they have access to touchscreen tech or tablets. However, others see their students confidently use advanced technologies like artificial intelligence in their daily learning.

Nearly all industries across the world state that the skills people need are changing. Unless these skills are developed now and within education, then future economies will be significantly affected. Change will only happen if we can inspire young people to learn more than what's available to them. If they learn more, they can become more. And then they can achieve more.

Asking governing boards to invest in tech like augmented reality and artificial intelligence is now more important than ever before. These technologies are forming the foundations of a new and emerging digital economy. Establishments have a responsibility to ensure their students can both understand new tech, as well as use it confidently.

No one knows what the future of technology will be. The best way to adapt is to ensure that education and industry continue to collaborate, so that we're all fit for the future. Technology is inclusive by nature, and it's no longer just for the elite. Now, it's time to create a world where everyone can learn and innovate.



Discover how we can help.
Visit: education.global.fujitsu.com
Follow: [@AshMerchant1](https://twitter.com/AshMerchant1)

A person is seen from the side, looking at a laptop screen. The screen displays a world map composed of binary code (0s and 1s). The background is a solid dark red color. The text 'Education around the world' is overlaid on the left side of the image in a white, sans-serif font.

Education around the world

While many of the opinions given by our education IT leaders were similar across the seven countries, we thought you'd like to dig in deep and see what stats sit with your specific country.



US



» What are the key challenges for IT departments?

57% Keeping up with technological advances

49% Increasing technology expectations from staff

38% Limited IT resources

» What are the biggest problems with devices?

49% Easily broken/damaged through student use

50% Cost of replacement parts

32% Levels of IT support required

» What's the current rating of digital literacy?

59% of students are excellent or good

35% of teachers are excellent or good

31% of students are poor

27% of teachers are poor

United Kingdom



» What are the key challenges for IT departments?

59% Keeping up with technological advances

54% Limited IT resources

42% Government funding and investment

» What are the biggest problems with devices?

45% Easily broken/damaged through student use

34% Cost of replacement parts

33% Poor battery life

» What's the current rating of digital literacy?

60% of students are excellent or good

46% of teachers are excellent or good

23% of students are poor

12% of teachers are poor

Hong Kong



» What are the key challenges for IT departments?

66% Limited IT resources

51% Government policy around education

50% Government funding and investment

» What are the biggest problems with devices?

51% Cost of replacement parts

46% Easily broken/damaged through student use

38% Levels of IT support required

» What's the current rating of digital literacy?

43% of students are excellent or good

39% of teachers are excellent or good

29% of students are poor

26% of teachers are poor

Germany



» What are the key challenges for IT departments?

55% Limited IT resources

49% Keeping up with technological advances

39% Government policy around education

» What are the biggest problems with devices?

36% Easily broken/damaged through student use

35% Levels of IT support required

32% Cost of replacement parts

» What's the current rating of digital literacy?

54% of students are excellent or good

38% of teachers are excellent or good

33% of students are poor

26% of teachers are poor

Australia



» What are the key challenges for IT departments?

52% Limited IT resources

45% Keeping up with technological advances

45% Government policy around education

» What are the biggest problems with devices?

44% Cost of replacement parts

42% Levels of IT support required

39% Expensive

» What's the current rating of digital literacy?

55% of students are excellent or good

48% of teachers are excellent or good

35% of students are poor

25% of teachers are poor

Thailand



» What are the key challenges for IT departments?

69% Government policy around education

46% Keeping up with technological advances

44% Time spent on maintenance/upkeep of equipment

» What are the biggest problems with devices?

63% Easily broken/damaged through student use

50% Cost of replacement parts

50% Limited/non-existent in-built security

» What's the current rating of digital literacy?

54% of students are excellent or good

17% of teachers are excellent or good

37% of students are poor

27% of teachers are poor

Indonesia



» What are the key challenges for IT departments?

65% Limited IT resources

63% Government funding and investment

61% Keeping up with technological advances

» What are the biggest problems with devices?

55% Easily broken/damaged through student use

55% Levels of IT support required

49% Cost of replacement parts

» What's the current rating of digital literacy?

47% of students are excellent or good

35% of teachers are excellent or good

43% of students are poor

31% of teachers are poor



Insight Avenue, a specialist provider of thought leadership research, was commissioned by Fujitsu to undertake independent research with IT decision makers in educational establishments (higher, further, secondary and primary) across US, UK, Germany, Australia, Hong Kong, Indonesia and Thailand. 602 quantitative interviews were conducted online and by telephone during March/April 2017.



Visit: education.global.fujitsu.com

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