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THE IMPACT OF
AI IN EDUCATION

TANK

AI AND TECHNOLOGY IN EDUCATION: WHAT'S NEXT?

When schools, colleges and universities were forced to close at the height of the COVID-19 pandemic, technology played a vital role in maintaining some form of normality for thousands of children and young people across the country.

Fast forward four years and the ed tech sector has boomed, with digital solutions now embedded into almost every aspect of school and university life. From streamlining communication, to enabling greater flexibility around how the curriculum is delivered, the sector has transformed.

However, during this period there's also been great discussion around the potentially negative consequences of new technologies. From questions around child online safety, to how generative AI may enable students to submit work that is not their own and actually hinder learning, the sector needs to balance a number of considerations.

A decline in knowledge?

At the end of 2023, the Programme of International Student Assessment (PISA) announced a global decline in reading and maths scores. Experts speculated that this drop was somehow connected not only to the pandemic, but to the now-ubiquitous use of laptops, tablets and phones in classrooms.

However, like many industries the use of new technologies promises significant reward – if the risks can be properly understood and mitigated.

AI-enabled tools can cut teacher workload, reducing the amount of time spent completing administrative tasks, while finance and HR teams can better understand trends in their data and take timely action.

Looking at further education, AI can enable more flexibility in terms of how modules are developed and delivered, as well as making courses more accessible to a larger demographic of students.

It's clear that there's huge potential.

The second Tank AI roundtable of 2024 saw experts from across the education and technology sector discussing how teaching and learning is being impacted by the growing use of technology. From the role of generative AI, to calling on the government to do more to ensure the UK is an attractive location for ed tech investment, panellists included:

Chris Green
Operations Director,
Full3sixty

Emma Slater
Head of Education
at Access Education

Cato Rolea
Digital Transformation
in Global Education Expert

Phil Wood
Professor of Education
in the Nottingham
Institute of Education,
Nottingham Trent University

Lili Zhu
Founder,
Partner of FounderX

Stuart Samuels
Senior Learning Designer,
Nottingham Trent University

Niloufar Zarin
Head of AI,
Thrive Learning
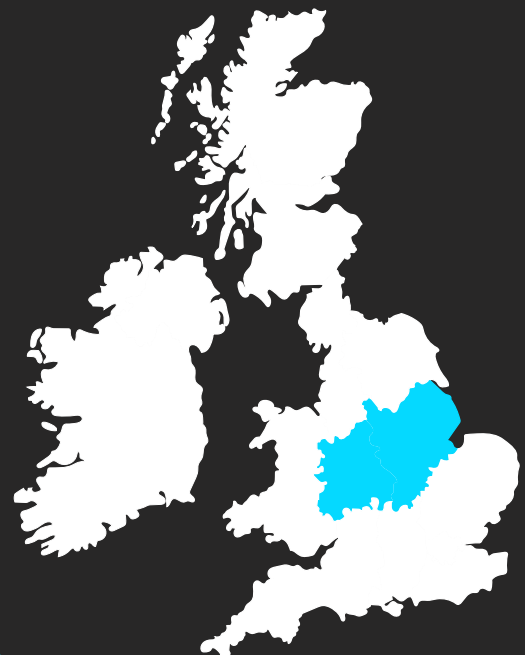
HOW LONG HAS AI BEEN A FEATURE OF ED TECH?

Emma Slater

AI as a concept is much older than most people assume. In fact, I remember Leeds University offering an AI module back in the mid-90s...

What's new is Generative AI and that's what's making a huge impact not only across the ed tech landscape but also in the classroom, across both primary and secondary education. I'd say there are a few companies at the forefront of its development but on the whole, the ed tech market in schools remains quite traditional when compared to higher education.

It's important to point out that the ed tech market is now utterly saturated with new products, all boasting some element of AI. Whether that's true AI or machine learning, I'd say new solutions entering the market will struggle if they don't have some form of AI built into them.

HOW ARE TRADITIONAL EDUCATION SUPPLIERS PIVOTING TO NAVIGATE THESE DEVELOPMENTS?

Emma Slater

It's really mixed. There was a recent poll looking at the use of textbooks in schools and, for the first time ever, this had dramatically decreased. When you think that most schools across the UK have huge cupboards full of them, it certainly raises questions around what the future looks like.

Interestingly, the education publishing world doesn't seem to be embracing these technological developments at the same rate as schools and universities. Combine this with an ageing teacher workforce and you can see that change won't come overnight. Recently one school had to reverse a policy whereby pupils were given Kindles instead of reading books and it was the parents who weren't ready to accept that change.

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HOW ARE MORE IMMERSIVE PRODUCTS BEING RECEIVED?

Chris Green

We've certainly seen regional differences, with schools in Wales and Scotland initially showing the most interest. One of the best examples I can give is a conversation we had with a head of education at a school in North Lanarkshire. Approximately 70-80% of pupils are on free school meals and many of the children haven't done things that some would take for granted such as visit the seaside over the weekend. This makes it really hard for them to then write about these sorts of things, as they have no experience of what it's like.

That's where immersive classrooms can make a significant impact as they enable children to visualise and experience things. Not only does this improve their understanding of certain situations, it enhances their overall understanding of the world around them. But schools have to be prepared to invest in this sort of technology and it can't be seen as a novelty.

As new technologies are developed and rolled out, teacher pedagogy will also need to evolve. Schools need to be willing to invest money and time, appointing and training digital champions. These members of staff will take responsibility for the new tools, understand the technology, how it works and where it can be applied – otherwise it won't make an impact.

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WHY DO YOU THINK THERE'S BEEN A HIGHER UPTAKE OF THIS SORT OF TECHNOLOGY IN WALES AND SCOTLAND, THAN ENGLAND?

Emma Slater

That's an interesting point because the latest PISA report found that performance in Scotland's secondary schools had actually slipped, showing a long-term decline in performance in reading, maths and science. Wales followed Scotland in the type of curriculum they're now delivering so it'll be an interesting trend to keep an eye on. Of course, a number of factors will contribute to this, from training to inadequate funding.

Chris Green

In England the curriculum is still very fixed, whereas in Wales and Scotland you have national curriculums that suit more exploratory and immersive learning. However, this is starting to shift and I'd say in the last nine months we've gone from having to explain what an immersive environment is, to people having a much higher level of understanding.

Maybe this is because you've got things like the BBC Earth Experience, which showcases footage and is narrated by David Attenborough so there's just more awareness.

Phil Wood

I can remember back when New Labour were spending significant amounts of money on interactive whiteboards. In most cases they weren't even being used as interactive whiteboards as teachers hadn't been given the training. I'd argue that ed tech traditionally suffers as it's driven by technologists and it doesn't necessarily provide teachers with the tools they most need, such as pritt sticks or tactile learning tools.

We also need to be careful of the narrative being pushed around 'banning' certain technologies in schools, such as mobile phones. There's a danger that a climate will be created where the only contact parents have with technology is a negative one. This doesn't specifically relate to AI, but it's important to consider the wider technological landscape.

Lili Zhu

That's a really interesting example as even within our own office we don't know how to use the interactive whiteboard. Technology should be developed and implemented with the aim of solving a problem. No matter how good or innovative the product is, if it doesn't solve a problem it won't make an impact.

ARE WE SEEING A SIMILAR SET OF CHALLENGES AND PROBLEMS ACROSS HIGHER EDUCATION?

Stuart Samuels

My first teaching job was at a college and we actually had an interactive whiteboard but no chairs – it was a classic case of people getting excited and trying to run before they could walk.

When I speak to students and ask them what they actually want from technology and online learning, the most common answers are 'consistency', 'having everything labelled correctly' and 'systems working as they should'.

We need to be getting these basics right before we start spending significant amounts of time and money on the latest technologies.

Cato Rolea

I come at this from a slightly different perspective and I would argue that higher education is one of the most cautious industries in terms of AI adoption. Only about 5% of the staff I train at universities are technologists, the majority are lecturers, academics and administrators.

Pre-pandemic there was a big divide between IT teams and educators, but now the whole digital spectrum has changed and we're seeing more instances of partnerships between those who will be using the technology and IT departments. This is definitely a step in the right direction.

It's easy to see why universities were shy pre-pandemic, following things like the Cambridge Analytica scandal and bias algorithms, it's all about educating the people who will be using the technology.
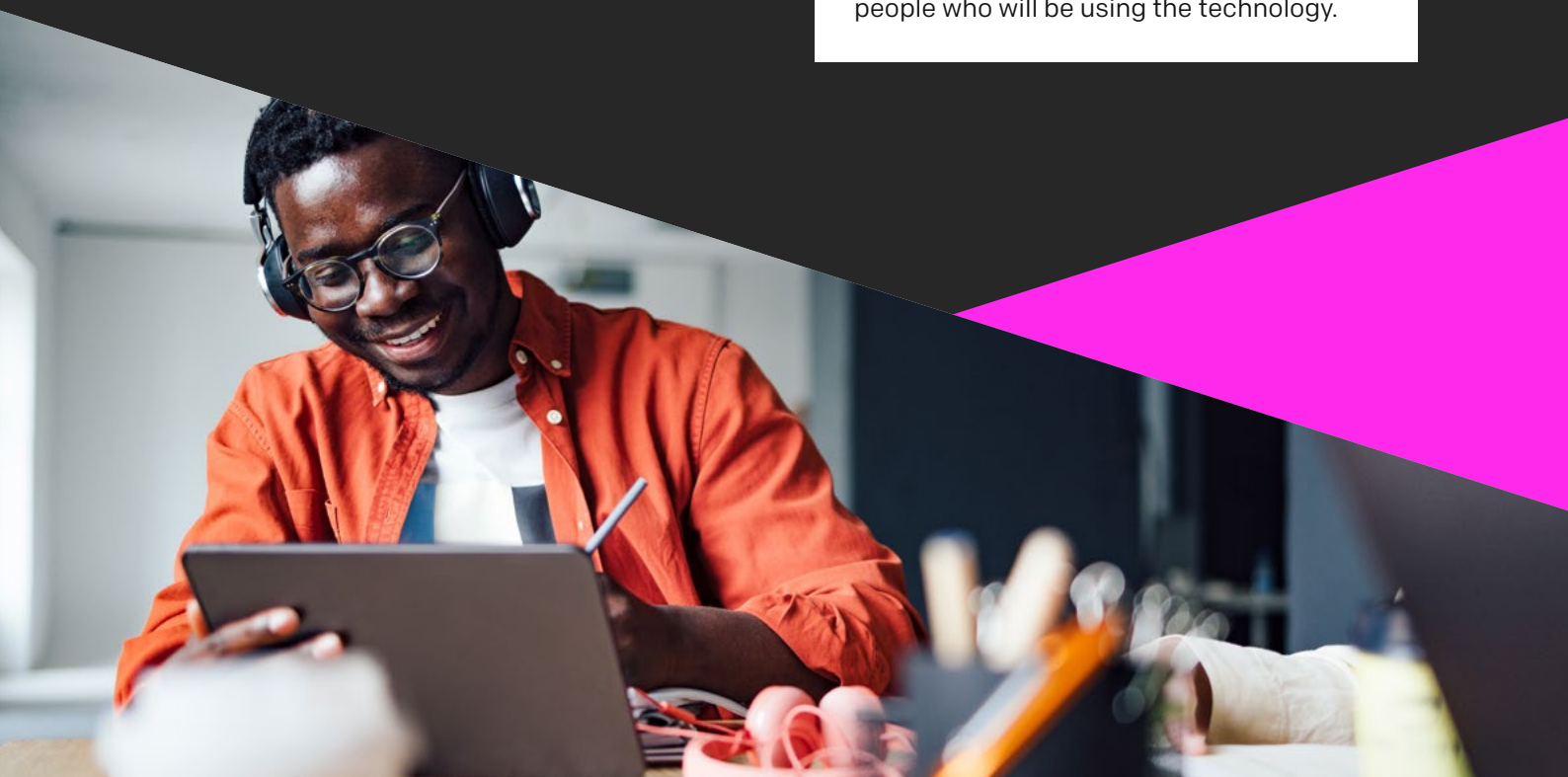
HOW IMPORTANT IS AI ADOPTION IN EDUCATION
TO THE UK GOVERNMENT?

Lili Zhu

There's a disconnect between policies and industry that needs to be addressed. Whatever your opinion about Brexit, it created both risks and opportunities – but these opportunities aren't being capitalised on as there's no clarity on policy priorities, we're simply too risk averse and this is stifling innovation

Cato Rolea

I was listening to a podcast the other day that said, 'the US innovates, Europe regulates and China replicates'. If you look at how AI has been evolving in the West, China is actually now way ahead because they don't have the same level of regulation.

Lili Zhu

Yes, it's definitely a global race towards technology and of course there's immense risk in terms of the ethical implications of AI. However, we need to learn to embrace this risk as you can't put the genie back in the bottle once it's out. AI isn't going away.

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Stuart Samuels

AI is one of those great examples where a new technology comes along and it's the students driving it forward. Currently, academics need to catch-up. When generative AI first came out there were even people asking when universities would issue policies banning AI, but that's simply unrealistic.

Phil Wood

It's interesting that technological change can be very rapid, but cultural change is notoriously slow and I think the adoption of AI is a mixture of both.

For AI to be deployed as a useful tool across the education sector, the way students are assessed and marked needs to change.

Currently, we have a curriculum that is designed to focus almost exclusively on the end grade. When students then get to university, they often ask, 'what's the assessment and what do I need to do to get the highest mark?'.

But how well does this actually prepare them for the world of work?

I'd argue that tools like ChatGPT can be really useful, but it's important to regularly ask, 'what am I learning?'. If a student uses ChatGPT to write an entire essay, then they will learn very little. However if they use the tool to assist with initial research, I see no problem with that.

It's all about re-integrating curiosity into schools and the curriculum. I use a research referencing tool that I find very useful, this is my starting point and I then apply curiosity. We need to teach young people the same skill set.

I'm currently working on a new masters course focused on scenario-based learning whereby the main assessment involves students choosing a scenario, explaining how they would deal with that scenario and applying theoretical insights – a situation that I feel is far more representative of the workplace.

Chris Green

Regardless of what you think of the devolved governments, it's far easier to deal with them. Scotland has a framework and you know who to talk to and who to deal with – and we know the budget available. The situation in England is totally different, response times can be varied and despite being told about a mythical pot of £179 million, it's very difficult to get straight answers.

IS THERE A DANGER THAT AI MIGHT KILL CRITICAL THINKING?

Phil Wood
Only if you have a system that isn't focused on engagement and curiosity.

Cato Rolea
I've been training students about the importance of AI prompting and how to create chatbots. I ask them to explain how they developed the technology, what are the risks and benefits, and what the end result will look like if they were to scale the technology into a business. This is really helping to develop critical thinking – just in a slightly different way.

Emma Slater
It's really interesting to hear more about the higher education sector because fundamentally lecturers setting modules have a certain amount of freedom to set that content. A classroom teacher has zero freedom to set the curriculum.

Key stage one is completely occupied by fundamental skills, key stage two is occupied by SATS, key stage three is where students should be developing a level of critical thinking and a more open minded approach. Yet, schools are so scared to move away from what is required of them throughout the GCSE years, this gets lost. In a secondary setting, your best teaching goes into the secondary and A level years, which dilutes the opportunities.

That's where the challenge is entirely around the adoption of technology. At the moment, the focus of the discussions around AI have been about lifting teachers' workload and doing teachers' work for them. There needs to be more thought into its potential, rather than feeling like another stick to beat teachers with.

WHAT'S THE INCENTIVE FOR TEACHERS
TO ADOPT THESE NEW TECHNOLOGIES?

Emma Slater

I would say that school and teacher incentives are two very different things. If we shift the conversation to operational then there's huge incentives for schools. Projecting budgets, forecasting, amending policy quickly. It's an area hiding in plain sight as we know that schools aren't always working in the most efficient way and the government should be focused more on this.

For teachers, the incentives are different. The average teacher uses seven products in a day, yet the average teacher only teaches six classes per day so that's at least one product per class. There's the mandated products that they have to use, so there's a lot of noise.

The question needs to be around how schools can create training opportunities, and help the teacher to see the true value in certain technologies. I'm not sure that anyone is getting that exactly right.

Lili Zhu

In business, we always ask what is the incentive for a person to adopt the technology. You can't just provide a product that's 80% better, you have to provide a product that they instantly see 10 times the benefit if they are to destroy all of their existing systems and ways of working.

We know that teachers are already busy, they are being assessed on the grades, it's easy to see why this isn't a priority for them. Schools and teachers need to be incentivised, rather than relying on individuals who are passionate about the adoption of technology.

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Niloufar Zarin

What I've seen is that there's a big focus on everything else except how we can help teachers. Focus needs to be on the user experience, yet very few people think about the impact on actual teachers. Often the intelligent products are the simplest ones. Has there been any research into what teachers actually need and what they'd benefit the most from? This situation really needs addressing.

Phil Wood

Back in 2019 the Finnish government acknowledged that there was a problem with social media and mobile phones being used in schools. Rather than banning the technology, they introduced a digital literacy course, starting at a young age designed to help children to understand the complexities and challenges and how they can become critical users of the technology.

As a consequence they now use mobile phones as research tools in the classroom and that's not a problem. It seems to be that you can add AI into that approach, so that you're introducing kids to AI at a young age to help them understand the basics. By the time they get to university or into employment they are already critical users and know how to use the technology effectively.
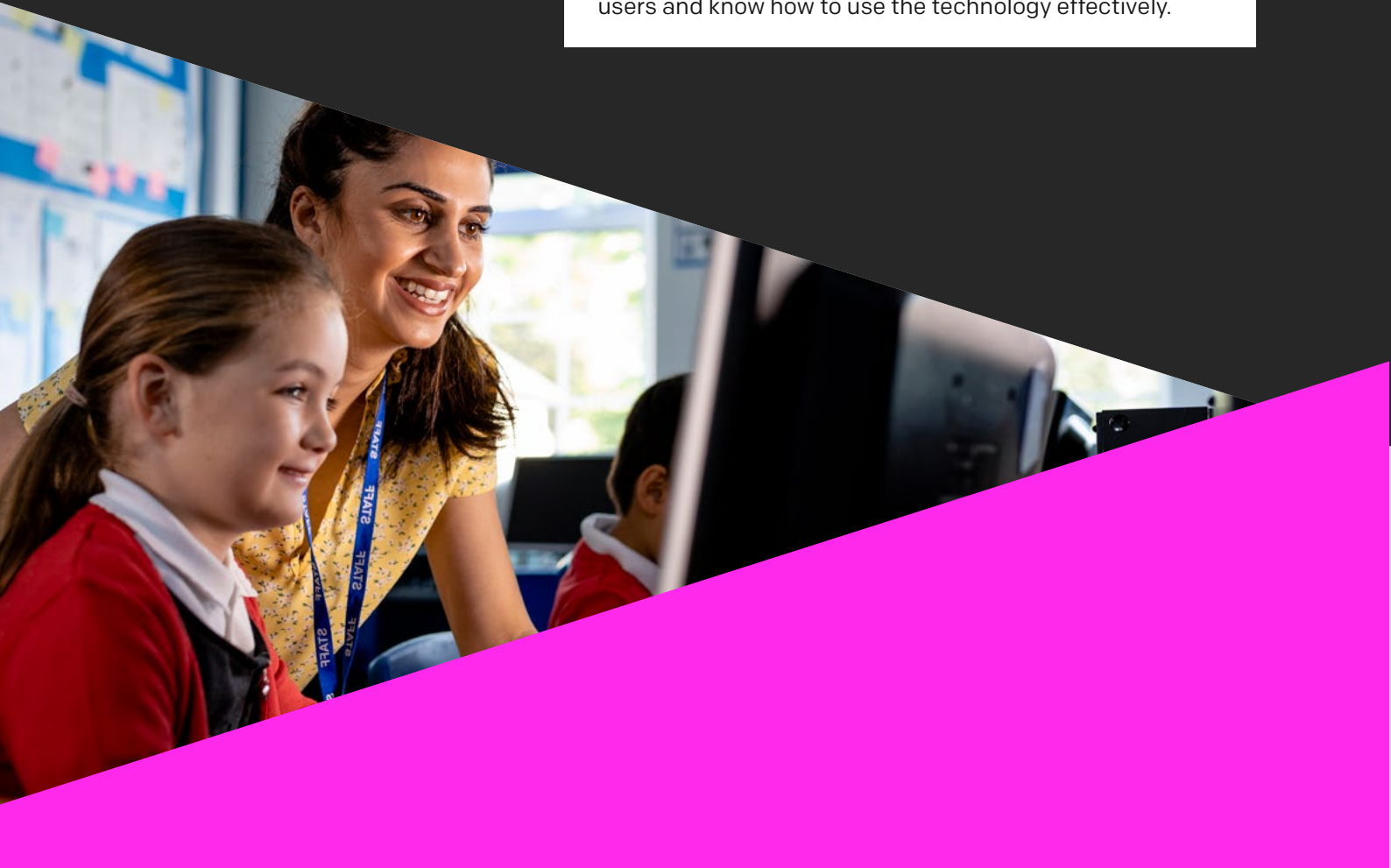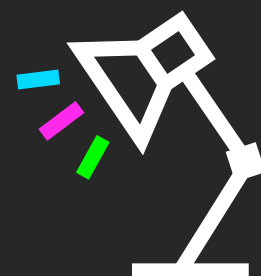
CONCLUSION

From the discussion it's clear that it's only right to invest in new and innovative technologies if the basics are already in place across school or university settings. Despite new technologies presenting clear opportunities, without a well thought out implementation strategy the benefits will not be fully realised.

A number of hurdles still remain, from understanding the exact problems that need to be addressed, to better incentivising teachers and lecturers.

Better incentives

Despite the clear benefits, the profession is currently lacking any real incentive to drive the adoption of new technology as the process requires time. This is something that very few can balance on top of their already busy workloads. This needs to be addressed moving forwards if we are to see progress.

Assessing the curriculum

If the curriculum remains fixed and almost entirely assessment based, young people will struggle to develop curiosity and critical thinking skills. To prevent this, there needs to be a shift in thinking to look at how technology and AI can aid learning.

Getting the basics right

The implementation of AI and new technologies across the education sector should not be prioritised over basic resource allocation. With budgets limited, there needs to be careful consideration of how the technology stands to benefit learning and a digital champion should be appointed to oversee implementation.

Clear policy guidelines from government

A lack of clarity from policy makers continues to stifle innovation, leading to missed opportunities and the UK losing out to other nations when it comes to investment. This needs to be urgently addressed.

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