HIGHLIGHTS FROM
2017 WISE SUMMIT

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Alix and Tom

Schools Week senior reporter Alix Robertson was joined at WISE 2017 by Tom Sherrington, an author and former headteacher with nearly 30 years' experience in schools.

Tom became a reporter in his own right for the two-day conference, attending sessions and carrying out interviews with delegates from different countries and areas of education.

You can read all about his encounters on pages four, six, 10 and 11, and find two insightful blogs he has written at the conference at www.schoolsweek.co.uk.

And if you have any time left over, you can also check out his book, The Learning *Rainforest*.

Introduction

On November 15 and 16 Schools Week went global, flying out to Doha in Qatar, to cover the World Innovation Summit for Education 2017.

The event was a departure from our usual UK stomping grounds, but yielded a wealth of interesting ideas and insights about teaching and learning from around the world.

We kick off with our coverage on page three, where you can find out about the history of WISE and hear chief executive Stavros Yiannouka's views on this year's event.

Page four introduces you to the first in a series of interviews with Tom Sherrington and some of WISE's top attendees – the rest can be found on pages six, 10, and 11.

The opening ceremony discussion, on 'Education in a post-truth world', is explored on page five, along with a panel debate on 'Teachers: transforming roles in changing times', chaired by the multi-talented Mr Sherrington himself.

Then on page seven, Sir Michael Barber, a former advisor to Tony Blair, sheds light on what it takes to deliver successful reform in education systems.

Page seven also delves into the world of behavioural science, exploring how "nudges" can be used to encourage positive choices in education.

On pages 12 and 13 you can read about the incredible projects that scooped a WISE Award

this year, and also find out who topped them all by winning the WISE prize for education 2017.

WISE commissions new research into education every year, and the 13 papers produced for the 2017 summit are explored on page 14.

Also on page 14, the closing ceremony wraps up with a debate on the importance of valuing knowledge in modern society.

And finally on page 15, delegates tell you all about their experiences at the event.

Thanks for reading!

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ALIX ROBERTSON

The history of WISE – and its future

The World Innovation Summit for Education is a biennial global conference that brings together individuals involved in education all over the world, to share ideas and work together on new projects.

An international initiative, it aims to "transform education through innovation". Established in 2009 by the non-profit Qatar Foundation for Education, Science and Community Development, its patron and chairperson is Sheikha Moza bint Nasser, a member of the Qatari royal family.

At WISE, teachers, decision-makers, and influential experts from public and private sectors gather in Doha to address evolving challenges in the field of education. Sessions at the event include keynote speeches, interactive panel discussions, hands-on workshops, special interest sessions, and informal meet-ups.

A "majlis", the Arabic word for "a sitting place", is organised at the event, as an exhibition space where sponsors can set up stalls, while "learning labs" are available for local students to experience new approaches to learning.

Through the Learner's Voice programme, young people can also get together in teams to think up and design projects that address education challenges, and present their work at the summit.

Readers of the WISE research reports (described

on page 14) can also meet the authors in the majlis and ask any burning questions about their work.

At the summit, delegates celebrate the winners of both the WISE Prize for Education, a world-class recognition of an individual or a team for outstanding contribution to any field of education, and the WISE Awards, which promote innovative education projects from around the globe (explored on pages 12 and 13).

WISE has also produced three books looking at ways to prepare individuals and communities for learning in the 21st-century. WISE authors and photographers travel around the world to find examples of work that is making a real difference on the ground. The latest publication explores links between technology and education.

An accelerator programme for education projects that use or design new technologies is available through WISE, bringing the creators together with expert mentors, partners and investors to help them with further development. Five projects are selected annually to join the one-year program.

The next WISE summit will take place in November 2019.

ALIX ROBERTSON   INTERVIEW

Stavros Yiannouka: The man with the plan

2017 has been a challenging year for the World Innovation Summit for Education.

The organisation faced a crisis in Qatar in June, when countries such as Saudi Arabia, the United Arab Emirates, Bahrain, Yemen and Egypt cut off diplomatic relations by withdrawing their ambassadors and imposing trade and travel bans.

WISE chief executive Stavros Yiannouka admitted to *Schools Week* the situation had caused concern.

"We had no way of anticipating the blockade in June," he said. "We were concerned to see this sort of retreat, not just from economic globalisation but from international collaboration.

"There was a sense of taking steps backwards, we thought we ought, as a global education conference, to have something to say about this."

In her opening speech, Sheikha Moza bint Nasser addressed the blockade, explaining that WISE's aim of bringing people together would not be disrupted. "They wanted to us to change, yet we remain unchanged ... Let us be inspired by this year's WISE theme of coexistence, and place it at the core of solutions for different challenges," she said.

The theme for WISE 2017 on November 15 and 16 was 'Co-exist, co-create: Learning to live and work together'. The attendance of over 1,000 delegates from overseas was "a big vote of confidence".

"The feedback that we have received has been overwhelmingly positive on the nature of the discussions and the substance behind them – it

seems that we hit all the right notes," he said.

"Education is not just about training people for particular jobs. It speaks to citizenship, responsibilities and obligations that we all have towards each other, toward the nations and cities we inhabit and, one would argue, the whole planet."

This is the first year WISE has chosen a theme not just limited to education but encompassing wider political and economic development.

"I think most people responded well to that," he said. "They liked to see that their work in education

has this broader significance and broader impact."

The organisation also put a lot of effort into creating new ways for participants to network at the summit, introducing the concept of "brain dates", where attendees could initiate and organise one-on-one or group conversations with each other on specialist topics, via an online tool.

"The uptake was staggering, I think we had over 500 individual and group brain dates that took place," Yiannouka said.

This added a new angle to the conference, alongside the rich variety of speakers who shared their work and ideas, he added.

Although WISE 2017 is over, the work has not stopped. WISE is launching a podcast, "WISE Words", and the first episode is available on iTunes now.

"We aim to have a new episode up roughly every two weeks," Yiannouka explained. "There's also the newsletter, our website and the chance to interact via social media."

And WISE will be holding regional forums over the coming months that act as stepping stones towards the next global summit in Doha in November 2019.

May 2018 will take WISE to Accra in Ghana, followed by New York for the United Nations general assembly at the end of September, then Paris around February 2019.

"We need to continue rethinking and reinventing education - this is what WISE is about," Yiannouka said.

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TOM SHERRINGTON IN CONVERSATION WITH

Mike Feinberg

Mike Feinberg is co-founder of the Knowledge is Power Programme, a network of over 200 schools across the US. Its logo is stitched into his shirt, carrying the slogan "Work Hard. Be Nice", a mantra Mike lives by.

Tell me about your current agenda with KIPP Schools

The mission remains the same as it was 23 years ago, which is to keep the sacred promises we made to all the kids and families who chose to come to KIPP: to get you to and through college. That's our day-in, day-out mission. Our vision is "how do we do this at scale?" In Houston we have a 12,000-kid wait-list and need to do a lottery every year. We have to start more schools but we can't open 20 schools for those 12,000 kids that wouldn't stink. We have to go slow. But if we can push the public schools along the way to help teachers get better, that's what we'll do.

So what is it about KIPP schools that makes parents want to come?

It's the individual attention, the feeling they get when teachers and leaders show up at their apartment to talk about the choice they're making. It's about the longer hours, the KIPP-to-college, supporting them all the way through after they've left us, it's that team family culture and spirit.

When they get to college we realise there's more we have to do, but at this point we're not their teachers any more, we're their uncles and their aunts. Across the US, first-year drop-out rates are higher than in high school. 75 per cent of all low-income kids who start college don't finish which is a tragedy. We see it as our responsibility.

Is funding that work only possible now you're working at scale?

We make it a budgetary priority. We have about a $150 million (£113m) budget for nearly 15,000 kids enrolled K-12 in Houston; a little over $1 million of that is targeted to keep the college team. In regions where we don't have that scale, it's one of the biggest goals for what we want philanthropy to cover.

How does "knowledge is power" manifest itself in KIPP schools. Is there a curriculum aspect?

Traditionally it hasn't been a curriculum; it meant there's a hunger and a thirst – a joy factor in gaining knowledge. The line comes from a chant we learnt from our mentor teacher back in the day:

[Mike bangs out a rhythm on the desk]

You got to read, baby, read. The more you read, the more you know.
Knowledge is power; power is freedom and I wan-nit.

But the curriculum aspect is starting to come. For the first 200 schools, we created a fair amount of chaos but for school 210 next year, if we don't do something about it we're going to have to reinvent the wheel. There is something poetic and beautiful about telling a teacher we're going to train you to be a school leader, here's your blank canvas, go and paint your masterpiece. But there is also something tiring about it. There is a happy medium. People might say haven't you learned anything from your first 200 schools? So now we do have a maths curriculum and when we get teachers training together we want them all talking the same language.

Is there a hard edge between the culture of trust and autonomy, and holding school leaders to account in KIPP?

It's the ultimate bargain: more freedom for more accountability. You're now a school leader. You decide who teaches in the building, how to allocate your budget dollars and in exchange for all that freedom we're going to hold you accountable. You can't shoulder shrug anymore; blame the system, blame the man, blame the community. You've got a million-dollar budget and when things go well you're going to share the credit with the team and when things go south you're going to take the blame.
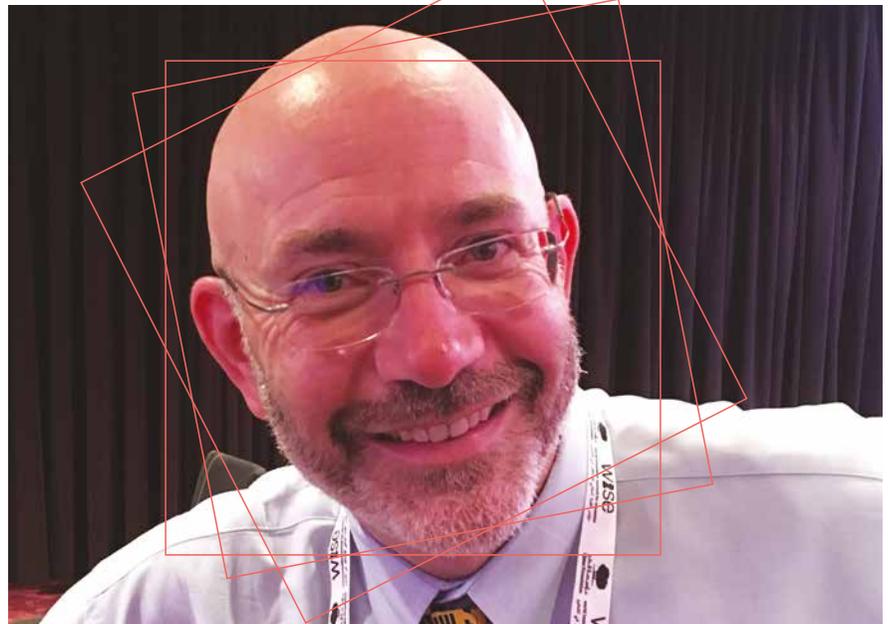
Is there a collective responsibility?

It's mainly on them, but it's not like we're there with a stick cocked back that's going to hammer you in the head when you fail. We're your biggest fans so help us help you.

So what are your ways of telling from a distance if a school is really working?

There are six healthy school questions that we collect data on:

- Are we serving the kids who need us the most?
- Are we keeping the kids?

"You got to read, baby, read. The more you read, the more you know"

- Are kids making significant academic progress?
- Are the kids going to and through college?
- Are we building a sustainable people model – through teacher and leader retention?
- Are we building a sustainable financial model?

Each of those questions has 10 to 30 metrics beneath them but if a school is hurting, you can't tell just from this data. You've got to walk the halls and walk the classrooms.

Often KIPP is cited in UK debates about a "no excuses" philosophy. What does that mean for KIPP schools?

"No excuses" has become bastardised over the years by the legion of doom: people who don't like us. Their critique is that no-excuse charter schools are cold and callous, just drill-kill kids, and don't care if there are housing or hunger issues but expect great results no matter what. That has never been what no excuses is really about. It has been a mantra for how our teachers view the challenges of our kids that come from our sort of communities. We've learned that there are a lot of very real excuses!

But the mantra means "how are we going to solve those problems?" For most things there are solutions; no excuses is for the adults. We have to be the constant, not the variable. Before we shrug our shoulders, we say what can we do to set this kid up for success? That's what no excuses means to us despite the noise that's out there.

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ALIX ROBERTSON

Opening ceremony

The World Innovation Summit for Education 2017 kicked off on Wednesday November 15 with a speech from CNN journalist Fareed Zakaria, on "how to educate people in a digital age". "What is it that human beings should master in an age when the computer can outsmart us at so many things?" he asked the vast audience gathered in the main theatre of the Qatar National Convention Centre in Doha. "I think about this all the time because I have kids."

Is teaching children how to spell, when "every phone, every tablet, every computer, has a spellcheck on it", or teaching simple maths calculations, when "you just put this into Google and you get the answer immediately", the best use of the "precious resources of a school", he asked.

As machines get "better and better", education must "teach human beings to become more human" and "emphasise those qualities that machines will never be able to emphasise".

The human element has never been more important than now, in an age of technological revolution, when "facts are becoming the great victim".

"In this new world technology has actually played a pernicious role, it has made it very easy to select facts from a vast, undifferentiated mess of information in the internet, with no hierarchy at all," he said. "This the path to the decline of civilisation,
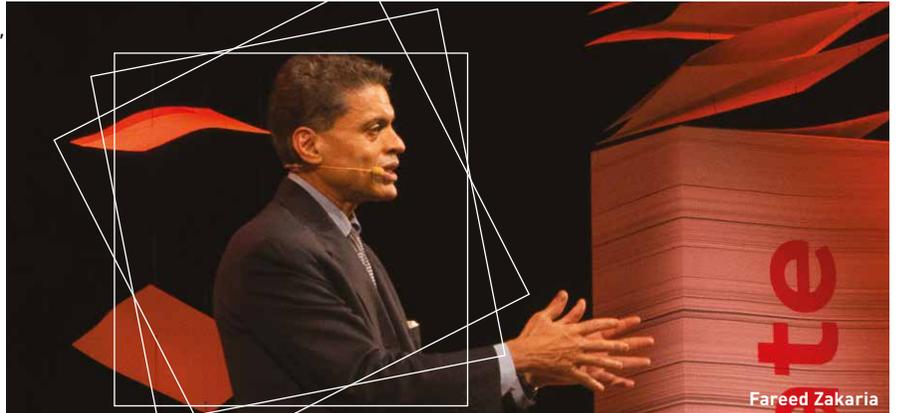
and the only thing that can stop it is education."

Zakaria was joined on stage by Professor Kishore Mahbubani, dean of the Lee Kuan Yew School of Public Policy at the National University of Singapore, to discuss how education should respond to the challenges in a world of fake news, misinformation and rapid technological advances.

"In this world where we are trying to seek the truth, one solution is to create multi-civilisational classrooms, multi-civilisational events like WISE, and say 'there are different perspectives, how do we put them all together to see the world as a whole'?" he said.

To help young people sift through the wealth of information now available to them, educators must teach "the art of questioning and challenging everything".

Zakaria agreed that the role of education is to "make us uncomfortable" and challenge conformation biases, where we look for evidence to support our existing beliefs and ideas.

Fareed Zakaria

Schools must teach children "how to turn things off, how to shut things down, how to focus and concentrate".

"You can graze headlines and tweets and blog posts as much as you like," he said. "At the end of the day the way you develop real knowledge about a subject still remains that you have to go deep, read books, talk to experts, travel to countries."

The human brain doesn't magically become smart "because you're reading tweets", and we must teach children "intellectual discipline and the ability to say no".

"In the world I grew up in there was no choice," he finished. "The way my children are growing up in is exactly the opposite."

Panel: Collaboration and development helps keep your best teachers

ALIX ROBERTSON

The best school leaders are those who can create a culture of "collaboration and constant learning" that helps to improve teacher retention, according to the co-founder of a chain of free schools in the US.

Speaking in a panel discussion entitled 'Teachers: Transforming role in changing times' on day one of the summit, Mike Feinberg, co-founder of the Knowledge Is Power Program Foundation, said schools leader should be responsible for recruiting good teachers and creating the positive environment that inspires them to stay with the school.

"The critical path is having that great leader setting the tone and creating a culture of collaboration and constant learning and wanting to learn and grow as professionals. That helps keep the teachers," he said.

"You need to get the parents, the students, the teachers on the same page, willing to work together in that common goal. Great culture comes from great leadership."

KIPP is a network of secondary-level charter schools in underresourced communities throughout America.

Teachers, parents and pupils at KIPP schools sign a learning pledge called the "commitment to excellence", which includes promises on keeping to timetables, following rules for safety and good behaviour, and helping with homework.

Feinberg said that among KIPP's 209 schools there are some with "fabulous retention" of staff, and some without. "To me the variable is the quality of the leader."

School leaders must be "instructional", spending time in the classroom watching teachers and providing feedback, modelling lessons and analysing data alongside their staff.

Dr Corrie Stone-Johnson, an associate professor of educational leadership and policy at the University at Buffalo in New York, argued that a strong school leader should look at wider factors before turning their focus to leading and learning.

"Teachers can't improve their instruction when they have no trust in their colleagues, where they have no relationship with the families they work with, or with the larger districts and systems in which they work," she said.

Dr Stone-Johnson added that school leaders must find out what motivates each teacher as an individual.

"For some people a little pay rise will be enough. Some people want professional development opportunities. Some want to go to another country and see what people are doing," she said.

Dr Dalia Fadila, founder of Q Schools, a chain of private English-language schools serving Israel's Arab minority, said good leaders can motivate teachers by turning them into "decision makers".

This panel was chaired by guest contributor Tom Sherrington

Designing a clear "track of promotion" provides a sense of purpose and achievement, and when it is "compensated accordingly" it can ensure teachers reach the "next level of commitment" by becoming "partners in the making of the institution".

Andy Hargreaves, the chair in education at the Lynch School of Education at Boston College in Massachusetts, said that while professional development is important, it must be built on collaborative, long-term working relationships and developed using "precise strategies", to ensure it is effective.

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TOM SHERRINGTON IN CONVERSATION WITH

Julia Freeland Fischer

Julia Freeland Fischer is director of the Clayton Christensen Institute, and author of 'Blended beyond borders', one of the WISE papers. Tom Sherrington asks her about her work.

So what exactly is disruptive innovation, and how can we apply it to the classroom?

"Clayton Christensen is the Harvard Business School professor who coined the term 'disruptive innovation' back in the 80s, which gets thrown around a lot these days."

"Every ed-tech entrepreneur you meet will tell you that they are 'disruptive'. In fact, it's a very specific theory of competition. What we do at the institute is take that theory and apply it to the public sector.

"We started to codify different instructional models that were starting to crop up. Everyone would say 'I'm doing blended learning' and you'd walk into their schools and classrooms, and you would see very different choreography.

"The definitions help people envision what can actually change when you implement and integrate technology in a meaningful way. Instead of digitising what we've always done, can you use technology to reallocate how you use time and space, and actually reach more students where they're at, stretch them, gauge their working memory capacity and background knowledge, all the things that learning science tells us you should do to properly differentiate."

In England, there are a lot of people very excited about cognitive science who are sceptical of tech.
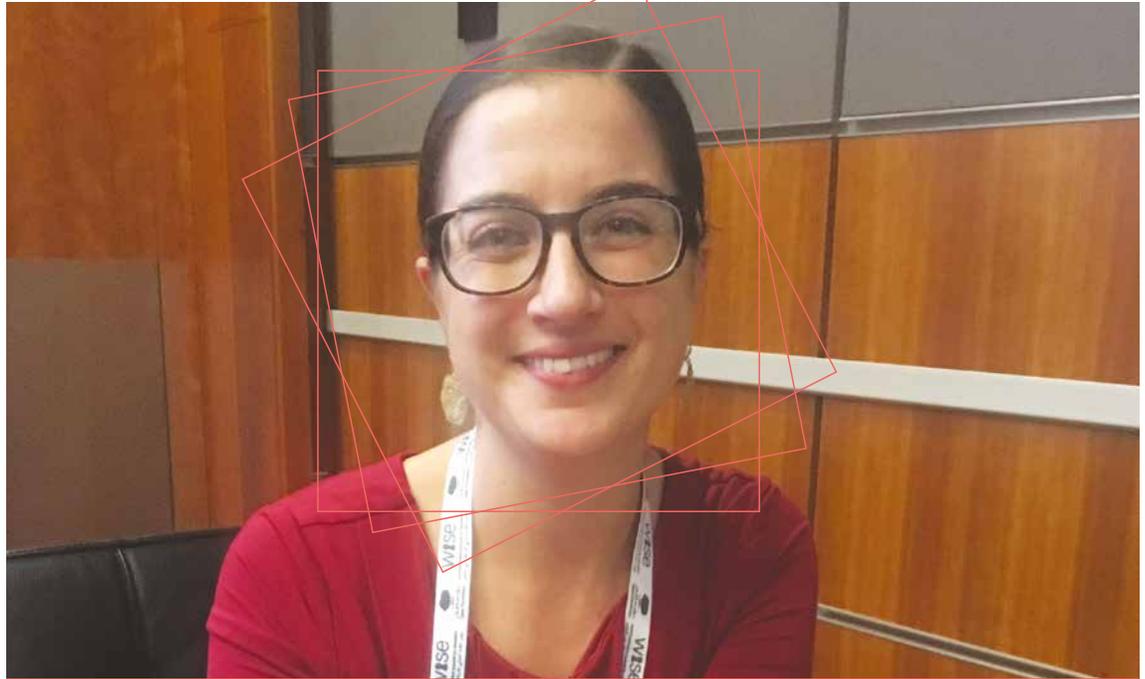
"I think ideas about tech and cognitive science are starting to merge. There has always been a divide between research and practice and then ed-tech came in and was a blunt-force instrument sometimes: very literally "let's just put a lecture online". For us it's the shift in instruction that matters, not the technology itself alone.

"We partnered with WISE to try and understand whether teachers and leaders in South Africa, Malaysia or Brazil are using online learning and how it is potentially reshaping or not their instructional model."

What's the most developed version of blended learning you've seen in those countries?

"This will sound clichéd based on everything I've just said, but I think it was individual teachers who had recognised the opportunity to truly shift instructional practice and use technology as one tool in a new model to differentiate learning.

"People throw up their arms and say "we don't

" **If a student is working individually on a programme online and you can see where he's excelling, where he's struggling"**

have connectivity so we can't do this". In reality, you do not need every child to have a laptop or 100 different visual tools to run an effective blended model. You could have three laptop computers and limited connectivity and still leverage these opportunities for instructional shifts. If a student is working individually on a programme online and you can see where he's excelling, where he's struggling, you can actually target your instruction.

"You have some visibility into that student's performance in a way that otherwise you might only see in the test at the end of the week and there would be a lag time in that intervention.

"People will often bemoan a lack of devices if they're not a fully one-to-one system. We always say one-to-one is not an instructional model, it's just a piece of hardware. The question is, really, thinking about your instructional goals and about whatever limited technology you do have, what can you do with it to get close to those goals?"

Is there an issue with the use of tech where you just make things with multimedia products in a way that doesn't develop deeper learning?

"I don't like to dismiss it so much as just differentiate it from what we call blended learning. So we call what you just described "tech-rich", meaning you have technology tools in your classroom, and you may be using them to write blogs, to collaborate, to code things, or do projects.

None of that is bad, but it doesn't actually scale access to content in the same way that an online and blended programme would.

"A tech-rich model lives and dies by the quality of the individual teacher and what he or she is able to do with those tools.

"One of my surprises coming out of this report was how much tech-rich provision we saw as opposed to blended learning when we actually went in-country to visit schools. You'd walk in, there's a smartboard, kids are storing their documents in a common platform, but none of the learning is actually occurring online."

It seems the assessment tools are the driver that could make blended learning work.

Diagnostics have to catch up to content delivery, I agree 100 per cent. I think the old business model of schools is to acquire content and not to actually focus that much on diagnostics. If you're worried about attendance and average outcomes, precision diagnostics – that look at individuals – are not actually in as high demand as they ought to be from a learning perspective. So the market hasn't caught up there.

"My guess is there's going to be downward pressure from higher education to get better at assessment. I don't know if it's going to come from the bottom up given the sort of glacial pace change happens in those systems."

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ALIX ROBERTSON | INTERVIEW

The three pillars of education reform

Successful education reform requires three central pillars: a clear design, strategies for innovation and a structured approach to implementation, but teachers need to get on board with change too, a leading government advisor has said.

Sir Michael Barber, the founder and chairman of Delivery Associates, an advisory firm which helps governments and other organisations to deliver improved outcomes, attended WISE 2017 to launch his new paper on 'How to deliver improved outcomes for school systems'.

"The basic message is that it's hard to get local policy and the design right but even if you do it's only 10 per cent of the task," the former chief advisor to Tony Blair told Schools Week.

"The big task is implementation and the reform is not going to have any effect on learning outcomes unless the teachers change what they do: they're the people that affect learning outcomes."

Barber said that central to making lasting change in education policy is "seeing through" ideas.

While many governments aspire to improve school education, and invest heavily in making changes, "few succeed in improving outcomes", his report says, describing "a delivery chasm between aspiration and reality".

Barber, also former chief education advisor at Pearson, quotes research from the Organisation for Economic Co-operation and Development (OECD), which find that the UK "lags behind other advanced nations in basic attainment levels among 16- to 24-year-olds".

In the UK, the "best single predictor of later participation in education is earlier participation", meaning "those who fail at school are often destined to fall even further behind".

The picture is "no better" in the USA, Barber found, and even in Canada, where "school performance has generally been in the top handful globally", there are still "minorities who fail dramatically".

"Even the best systems face significant disadvantages," he wrote. "All systems require major improvement learner outcomes and much greater equity as a precondition for future social and economic success. For those further behind, such as many systems in South Asia or sub-Saharan Africa, the challenge is truly daunting."

Advances in technology are also driving the need for transformation of school systems.

"Technological developments are likely to transform labour markets and the very nature of work within 10 to 15 years", leading to "radical shifts" that will change the demand for skills and have "incalculable implications for schools systems".

Barber's report suggests that "given this state of affairs ... one might anticipate there would be a clamour for reform among those who work in education systems", such as teachers and officials, parents and families.

But "in practice these groups all too often resist

Sir Michael Barber

change or argue for incremental change" in the face of "difficult and discomfiting" developments in the system.

"I don't want people to think I don't understand that when somebody changes the test system in primary schools it has a big consequence if you're a primary teacher, and I understand that that is difficult," he told Schools Week. "But I want to remind people of the big picture."

The current era of public education in England is "the best we've ever had", he said, praising changes such as academisation, which he sees as allowing rapid innovation without the trappings of "traditional bureaucracy".

"There are all these changes, and it has been difficult, but actually it's a great system," he said.

"Comprehensive education reform" is "the only way" to meet the educational challenge of the mid-21st century, he concluded in his report, advising that educationalists embrace change for the future as "a matter of urgency".

'Nudging' kids to praise their teachers

ALIX ROBERTSON | DISCUSSION

Behavioural scientists are developing ways to use university application channels to "nudge" pupils into giving positive feedback about their teachers.

Ben Castleman, the director of the Nudge4 Solutions Lab at the University of Virginia in the US, is looking at how technology can be used to provide teachers with more recognition for their work.

In behavioural science, "nudging" is a method that uses positive reinforcement and indirect suggestions to influence people's decisions or actions.

In England, the Behavioural Insights Team, a project set up in 2010 and jointly owned by the government and the charity Nesta, has used nudging approaches to influence pupils to eat more healthily, improve their attendance at school, and discuss what they are learning with their parents.

Castleman's project will identify which teachers have written references for their pupils when they apply to university, and offer the young person the opportunity to return the favour.

"In the states at least, teachers don't feel recognised for the work they do and the impact that they are having on children," he told Schools Week on day two.

Ben Castleman

"There's some focus on increasing teacher compensation, as a way of supporting more teachers to stay in the profession, but there's also a fairly strong view that it's not just about paying teachers more.

"What we are going to do is nudge students to write letters of gratitude explaining what the teacher meant for them."

The project will be carried out in partnership with an organisation that helps American students apply online to universities, in a similar process to UCAS in England. It is expected to be ready for delivery next year.

"If the student asked that teacher to write a recommendation for them, there was probably something about that teacher that meant they had a positive relationship," he said.

"We should pay teachers more for the work they do, but while we are working to do that, providing student gratitude through this kind of nudge could make a big impact and could help teachers really feel a sense of appreciation that then motivates them to work that much harder with their current students, and motivates them to stay in the profession."

Speaking in later a panel discussion with Castleman on 'Behavioural strategies: Nudging for right education choices', Sharath Jeevan, the founder of STIR Education, an NGO working with teachers in India and east Africa, said knowing they have had a positive impact on pupils is one of the most important motivating influences for teachers.

His research identified "seeing a child learn", being able to "actually change things" or have an impact on a pupil, and feeling that you are part of "something bigger" are all factors at the core of teacher motivation.

STIR has used behavioural science in its work to tackle the problem of teacher absence in India and Uganda, where it found that teachers were less likely to attend school than their pupils.

The project reaches around 2.5 million children taught by teachers who are involved in the STIR teaching network, which encourages teachers to come together, share ideas and set targets for improvement.

What it means to be ed
Ideas for rethinking ed
for a post-truth world

It used to be fairly easy to explain what it means to be educated. Education involves schooling, and as a general rule, the more schooling you have, the better educated you become. Unfortunately, as I will argue below, that answer may no longer be sufficient; there is evidence to suggest that the causal link between schooling and education, if not already broken, is seriously frayed.

First the evidence. A recent report on the BBC explored the linkages between educating women, and the immunization of children against preventable childhood diseases. The report cited several authoritative studies carried out across the developing world showing a positive correlation between levels of education and rates of immunization. In other words, the better educated the mother, the more likely it was that she would have her children immunized. So far so good. The report however, also cited a US study, and a large global survey carried out by the London School of Hygiene and Tropical Medicine, that showed an inverse correlation in the US and several advanced European countries. It turns out that educated mothers, particularly those with college-level degrees, are less likely to vaccinate their children than those with only secondary education. There is also plenty of anecdotal evidence to suggest that this phenomenon is not limited to vaccines. On topics ranging from climate change to evolution, there are many individuals with advanced schooling, who hold counter-factual views. This elevation of opinions and feelings over facts led Oxford Dictionaries in 2016 to name post-truth as its word of the year.

What might explain this phenomenon? Simply put, for the last 500 years or so and despite record levels of schooling, as individuals, we are unfortunately becoming more ignorant in relation to the aggregate stock of knowledge that we as humanity collectively possess. The principal culprits are evolution, and information technology. Evolutionary change is a very slow process. Modern humans have existed as a species for around 200,000 years. During this time, our basic biology, including the size of our brain, has remained largely unchanged. Information technology on the other hand, has been changing exponentially particularly in the last 500 years or so.

Prior to the introduction of the movable-type printing press to Western Europe by Johannes Guttenberg in the 1440s, the spread of knowledge, even in relatively literate societies like those of Classical Greece and Rome, was severely constrained by the need to write and copy books by hand. The printing press changed all of that. In the fifty or so years after its introduction, more books were printed than were copied by hand in the preceding one thousand years. This explosion in the amount of knowledge that could be captured, stored, and transmitted, was a major trigger for the scientific, and industrial revolutions that were to follow. Subsequent population growth, and the economics of specialisation (the division of labour) fuelled further exponential growth in knowledge creation which in turn led to significant technological advances. In more recent times, the spread of computers and the Internet appear to be having the same effect. Moreover, unlike books, computing power has also further accelerated the speed at which new knowledge is being created, not just disseminated. Calculations and analyses that used to take weeks or months to perform by hand, can now be rendered in minutes or even seconds.

While there is no readily available, accepted measure for the stock of human knowledge, Google estimated in 2010, that some 130 million individual book titles had been written thus far in the world. Even if only a small subset of these comprise discrete knowledge objects, it is clear that a single human being, in a single lifetime, can only hope to absorb a miniscule fraction of what is available. To paraphrase the science fiction writer, Arthur C. Clarke, the inconvenient truth is that most us are unable to distinguish advanced knowledge and technology from magic. More worryingly, Clarke also speculated that the growing divergence between collective versus individual knowledge and understanding could ultimately doom humanity to self-destruction.

If we are to arrest and perhaps even reverse our decline towards ever increasing levels of relative ignorance, we need to rethink and reinvent the way we do education. While there are no simple, off-the-shelf answers, the following ideas can hopefully begin to stimulate much needed debate about what, how, when and where, and why we teach and learn.

What we Teach and Learn

Our current education systems are geared towards producing specialists in fairly well-defined academic disciplines. Consequently, as one advances through the education system, curricula become progressively narrower and more specialised at the expense of general knowledge and understanding of key concepts. We therefore need to reverse that trend and identify the key concepts around which to construct a high quality general education for everyone. The physicist David Deutsch in his 1998 book, The Fabric of Reality, argued that despite the exponential growth in knowledge, it was still possible for someone to know everything there is to know, at least at the level of being in possession of the tools of interpretation, if one gained an understanding of four key concepts: quantum physics and the many universes interpretation; the theory of evolution; the theory of computation; and the theory of knowledge, explanation and understanding (epistemology). We can of course question whether Deutsch's list of key concepts is complete or even correct; but what seems logically unassailable, is his idea that in a world where knowledge is growing exponentially, the tools for acquiring and interpreting that knowledge are at least as important as the actual knowledge itself. I hope to explore and elaborate on this idea further in my forthcoming book, What it means to be educated: Ideas for rethinking education for a post-truth world from which this article is adapted.

ducated:

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Stavros N. Yiannouka
CEO, World Innovation Summit for Education

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How we Teach and Learn

There is not enough science in education. Our education systems were designed before we knew very much about the science of learning and in particular about how our brains work. That is now changing and we need to harness our newfound understanding of neuroscience, and the possibilities offered by information technology, to learn better and faster. In his highly entertaining and insightful book Brain Rules, the molecular biologist John Medina convincingly argues amongst other things that when it comes to acquiring information, vision trumps all other senses, and that our brains are naturally wired to learn through physical exploration. In other words, we learn best when we see and do. And this is where information technology comes in. Simple yet powerful simulation tools like those developed by the WISE Award-winning PhET Interactive Simulations of the University of Colorado, Boulder show considerable promise when it comes to conveying relatively difficult concepts in science and maths. And we have only just begun to scratch the surface. Imagine what might be possible were we to combine sophisticated gaming technology with virtual reality in order to develop fully immersive learning experiences!

When and Where we Teach and Learn

Education can no longer be confined to a distinct phase in our lives –from ages 6 to 18 or 22—but ought to become a lifelong endeavour. There is clearly an economic imperative as the jobs market becomes less predictable and more fluid. In this regard, efforts to democratise education and make it easily available through MOOCs like those provided by platforms such as EdX, or Coursera are to be encouraged. So too should innovative efforts to restructure qualifications around nanodegress (offered by Udacity) or short, skills-based courses (offered by WISE Award-winning Alison.com). Indeed, the Internet is now arguably the single most important repository of knowledge and information ever constructed by man. This places a special editorial responsibility on the custodians of the Internet, organisations such as Google, Facebook, and others to do more to regulate the quality of knowledge and information that is stored and conveyed.

Why we Teach and Learn

Education is above all else a state of mind informed by a set of core values. If we as individuals are to keep pace with the ever-growing accumulation of knowledge that makes and is in turn made possible by advances in technology, we need to engender within ourselves the desire to remain educated in the same way that we want to remain fit and healthy throughout our lives. To do that we need to adopt a set of core values chief amongst them being respect for the substantiated truth. Through the scientific method, good education elevates fact over opinion. But it also acknowledges that the search for the truth can be never-ending and often involves a contest of competing ideas, a contest that is best resolved through open enquiry and rational discourse. Through the social sciences, good education abhors absolutes, recognising the inherent trade-offs involved in complex human societies. Through the humanities, good education allows us to experience the world through the eyes of others, to see, hear, and feel what they did, to empathise. Through games and sports, good education emphasises the importance of collective effort and the need to sometimes subordinate the self for the good of the team. And through meditation, good education makes explicit the mind-body connection and the possibility of mastery over one's emotional state. Without these core values, we cannot claim to be educated.

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TOM SHERRINGTON IN CONVERSATION WITH

Kevan Collins

The WISE conference provided a great opportunity to meet up with the CEO of the Education Endowment Fund, Sir Kevan Collins. As someone often cited as one of the most influential people in English education, it was fascinating to hear his perspective on the role of the EEF and the processes that underpin its studies.

From Collins' point of view, it's important to stress that EEF doesn't do much actual research of its own. He sees its role more as a broker between people with ideas from across the sector and researchers with the expertise to conduct high-quality trials. It feels that it is still in the early days of development.

The research process involves establishing an area of interest, putting a fund together and inviting academics to review the literature. If there's some promise, it then invites bids for ideas addressing the issue at hand.

"We get hundreds of bids, then look at them carefully and ask three questions," he says.

• Is there a theory here suggesting we can do something about outcomes, particularly for disadvantaged children?

• Is there already some existing evidence to support the idea?

• Can it be scaled?

"We always start from what we know," he continues. "But we often test 'proof of concept' first. We're asking can this be done reliably in an English school, and not just in very niche contexts. That's not good enough. Some ideas fall at that hurdle; 'they just can't work in our busy lives'."

A good outcome is a gain of three months in effect size methodology, such as the effect found in the EEF's 'Accelerated reader' report. Researchers were encouraged enough by the first study that the body has now launched a much bigger trial that is currently underway.

He explored some of the issues surrounding two recent trials, one involving lesson study and the other involving structured teacher feedback. Neither showed a positive impact, and have been subject to critique from David Weston at the Teacher Development Trust and Michael Fordham, now with Inspiration Trust.

Sir Kevan was happy to explore the critique but wanted to defend the EEF's approach.

"We're not saying lesson observation doesn't work; we're saying that, in this context, this particular approach to lesson observations, using the well-established Danielson rubric for lesson observation, didn't make any additional difference to the business-as-usual group, which was also using lesson observation," he said.

"Yes, there are always caveats. There will be all kinds of what-ifs about different aspects of any

" We should talk about intelligent adoption of evidence — it's a much better concept than implementation"

trial. We're asking, if we give researchers the best possible conditions to make their idea come to life, in those conditions, did it work?"

His conclusion was the same on lesson study: "We tested the way people brought us the idea; it didn't work then but that doesn't mean, in different conditions, it wouldn't work in future."

I suggested that the headlines reading "X doesn't work" are unhelpful. He agreed entirely.

"We never write that. There's a front-end report but always a detailed academic study behind it.

"We're still working out the best place to have the debate and how to do educational research. All the results go into a public archive and researchers will be able to track the progress of all the children in our studies in the future. Maybe some effects will show up much later," he said.

He was keen to stress the extent of the input of independent audit processes.

"There's a price. If the trial is underpowered, there's insufficient statistical confidence. If we're spending millions in time and effort on lesson observation, it's not a bad question to ask 'does it make any difference?'" he admitted.

"We're spending tiny, tiny amounts of money compared with the billions that is being spent on

technology, for example. So far we've funded 154 trials. In the scheme of things we spend about £12 million a year out of a national education budget of £33 billion. That's a good return."

A null-return is disappointing but not a disaster. The lesson observation and lesson study reports have raised important questions and we now know a lot more about what does and doesn't work in conducting trials that will inform future studies.

On our culture of accountability and how it squares with the development of evidence-informed practice, he said: "We see a lot 'how do I get teachers to do what I want', defining problems as a question of compliance. We've been working that lever pretty hard but I think that compliance has run out of road."

The question now is how we create a system where people genuinely learn and adapt.

"We should talk about intelligent adoption of evidence — it's a much better concept than implementation," he added. "The culture of audit and compliance is very deep in our system; moving from that to a professional trust culture – and an institutional learning culture at a system level - is the goal. Having trust in each other is a big gap in the system."

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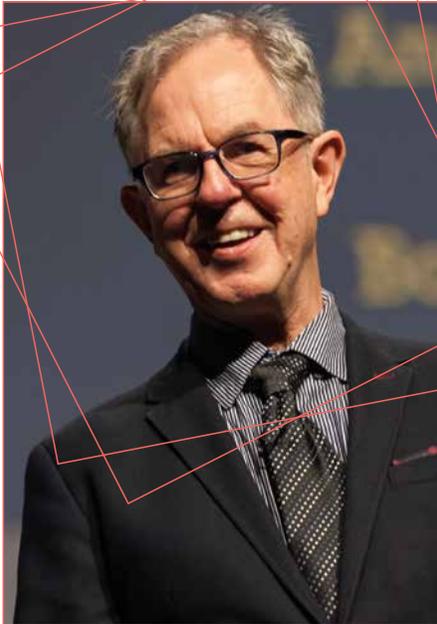
TOM SHERRINGTON IN CONVERSATION WITH

Andy Hargreaves

After a fruitful panel session with Professor Hargreaves, Tom Sherrington meets him to explore his ideas on collaborative professionalism.

A professor of education at Boston College in the US, Hargreaves has been working on professional collaboration for 25 years and thought until recently there was nothing more he could say on the subject. But WISE asked him to look again, and he came up with 10 new approaches he presented to the conference.

"In undertaking this work with WISE we looked at the literature again. Some of it said that people didn't collaborate but they should; we also found that not all ways of collaborating are effective. We looked at different designs for collaboration in different countries and the upshot was the new idea of collaborative professionalism. This means that you engage in collaborative activities but that you take evidence seriously, that you do it in a grown up way and do it with a bit of rigour and precision.

"Being grown-up means that you're ok disagreeing, which sometimes needs protocols to make sure it doesn't get personal. It means not just relying on opinion and realising other people's judgements matter as well as yours and that evidence transcends judgements.

"What we do know is that the evidence in support of professional collaboration is long-term and

indirect. Teachers' behaviours need to change before they starts to have impact with kids."

Prof Hargreaves argues that it is hard to separate the impact of collaborative professionalism from other variables which make the evidence more difficult to evaluate. He suggests we need to look over longer periods and use other comparative

methods, but insists good evidence is emerging.

"Some studies have found that schools where people collaborate do better than schools where people don't collaborate," he explained. "Other studies highlight the role of collaboration in teacher retention. Others have shown that, for example, when you introduce data teams to schools, where there's a collaborative environment they work well."

How can teams develop collaborative professionalism where they are not at an effective level? Is there a minimum level of expertise needed? He acknowledged that is in an important issue. It can be important to introduce process coaches or subject expertise where necessary, and how these people are brought into a team is a key question.

The 10 tenets of collaborative professionalism expressed in his report are a set of principles that leaders and teachers should try to hold to. Collective autonomy, for example, suggests people are less burdened by top-down directives but obliged to share with colleagues. Collective initiative suggests engaging in fewer initiatives but to create a platform for people to put ideas forward and make autonomous decisions. Collective responsibility means we're responsible for the same kids together: if a child is struggling in year 5, their year 2 teacher is also responsible.

The full set of 10 tenets are published in the executive summary to the report.

TOM SHERRINGTON IN CONVERSATION WITH

Annette Diefenthaler

Annette Diefenthaler is the education director at the design company IDEO. Tom Sherrington asks her what the design world can bring to the education table.

D iefenthaler's paper 'Thinking and acting like a designer' is informed by IDEO's educational work, which tends to focus on system-level solutions rather than at school-level.

However, the principles of design require them to start with ground-level details: the role of the teacher, the space of the classroom, the way learning is incentivised, the curriculum, and the model of assessment.

"It's a question of how all those elements are aligned in the service of the student experience," she explains." That is the main shift between how we approach questions and how they are traditionally approached. Normally it is a systems level starting point asking 'how do we make this more efficient'"

Design thinking can also be considered as "human-centred". It's about finding opportunities to understand people and develop innovative solutions to meet their needs.

Some of their work is with countries such as Peru, where in some areas there not enough teachers

available to deliver the curriculum at the level required. They have to find technological solutions to bring more students into contact with quality instruction.

"Some online tools provide better instruction that a not-well-trained teacher can," she says. "In some contexts, we've seen significant improvement in maths scores, for example, using this approach."

Diefenthaler is eager to distinguish IDEO's design thinking from management consultancy. The process includes a discovery phase which focuses on understanding all the stakeholders as well as looking at what else could inspire the design, such as practices in other schools and ideas from non-education industries. Then there are a series of cycles of experimentation to formulate ideas involving a design team and the stakeholders alongside technical experts. This process ultimately feeds into the final set of solutions.

One example of this in action was the development of "School Retool", a professional development system for school leaders designed with partners at Stanford University. The experimentation phase led them to abandon an online webinar-based model in favour of a four-month face-to-face programme that has been very

successful. Over 20 cohorts of school leaders have engaged in the programme so far in the first three years. The key was designing the programme with stakeholders, not simply seeking to implement a pre-existing model.

As well as seeking to influence policy makers, Diesenthaler hopes that design thinking can change how educators work together and become a feature of how students themselves approach learning.

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WISE Award winners from all

The WISE Awards celebrate and promote six successful and innovative projects that are tackling educational challenges from around the world. They were launched in 2009 and since then WISE has received more than 2,850 applications from over 150 countries.

The winning projects each receive a prize of $20,000. The winners and finalists are also given support and visibility for their work through the WISE media channels, and a chance to present at the summit in Doha.

So far, 54 projects have won an award for their positive contributions and their potential to be easily scaled up or adapted.

The six winning projects this year were selected from a pool of 15 finalists. They come from the UK, USA, Tanzania, France and Spain.

Applications or nominations for the WISE awards 2018 are open now and can be submitted online before the deadline of January 30, 2018.

Find out more about each of this year's winning projects.

PHET INTERACTIVE SIMULATIONS, UNIVERSITY COLORADO BOULDER (USA)

PhET have developed over 130 free simulations to engage students and help teachers with tricky subjects. The simulations are animated, interactive programs where student can explore different topics in maths, physics, chemistry, biology and earth sciences.

A lesson called "John Travoltage", for example, teaches common static electricity concepts by allowing students to make an animation of John Travolta dance until he gets a static shock.

The simulations have been translated into 90 languages and they are used over 80 million times a year around the world.

"We're passionate about science and maths and we believe that every child should have access to high-quality educational resources," said Dr Kathy Perkins, the director of PhET Interactive Simulations.

"I've seen the tremendous impact of these simulations myself, in my own teaching and with my two sons. We now want to bring them to students who still don't have access to science."

PhET is working to adapt its products to make them accessible for visually impaired students.

DR KATHY PERKINS, DIRECTOR, PHET INTERATIVE SIMULATIONS

SPEED SCHOOL, THE LUMINOS FUND (USA)

The speed school enables out-of-school children aged nine to 14 in Ethiopia and Liberia to catch up to their grade or year level in government schools, through an intensive programme for teaching basic literacy and numeracy.

They spend one year in the speed school to get back on track, and then return to local government schools with children of the same age.

Since the mid-2000s, the model has been implemented in four African countries, and to date has benefitted over 100,000 children and their families.

"Child-centred education is the best possible way for children to learn, even in the poorest corners of the globe," said Caitlin Baron, the chief executive of the Luminos Fund, which backs the project.

"Our assurance that we are headed in the right direction comes in the incredible enthusiasm of children in our classrooms."

CAITLIN BARON, CHIEF EXECUTIVE OFFICER, LUMINOS FUND

LEARNER GUIDE, CAMPAIGN FOR FEMALE EDUCATION (CAMFED) TANZANIA (UK)

The Learner Guide Campaign for Female Education provides an 18-month life skills course for 15- to 17-year-old secondary school students with a focus on girls.

The volunteers who are trained to deliver the program are previous students at Camfed schools and now act as role models for the next generation of girls.

The curriculum they deliver has been developed together with young people in sub-Saharan Africa.

971 Learner Guides have so far reached over 100,000 secondary school children in Tanzania.

"Girls not only need financial support to be in school, but they also need social support to succeed," said Lydia Wilbard, the national director for Camfed Tanzania.

"We needed to open up new pathways for young people after school. The learner guides are deeply rooted in their communities so they understand the challenges that the girls face and they can take action to provide the right resources to keep them in school."

LYDIA WILBARD, NATIONAL DIRECTOR, CAMFED TANZANIA

UBONGO, UBONGO EDUTAINMENT (TANZANIA)

Ubongo brings fun learning to millions of children in Africa through stories, animations and music across platforms including radio, TV, SMS and smartphones.

The content is adapted to suit a range of different local contexts and languages. It also provides guidance to schools and communities about how to support their children's learning and development.

Targeted at children aged three to 14, Ubongo is accessed by over 6.4 million households in Africa each week. It work to improve school readiness in preschool children, while primary school children can learn about topics such as the science of light or fractions.

"We leverage the lo-fi technologies that these families already use and we use these to help kids learn and love learning," said Nisha Ligon, its co-founder and CEO.

"We do it through the universal childhood language of cartoons, music and fun. Our programmes help kids to realise their potential by building a strong foundation of readiness to learn."

NISHA LIGON, CO-FOUNDER AND CEO, UBONGO EDUTAINMENT

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over the world

THE WISE PRIZE FOR EDUCATION 2017: FOUNDING A UNIVERSITY IN GHANA

The winner of this year's WISE Prize for Education was Patrick Awuah, the engineer, educator and entrepreneur who founded Ashesi University in his home country of Ghana.

In accepting his award, he described to delegates how his life had changed since his childhood plans to become an astronaut.

As an adolescent, he left Accra, the capital city of Ghana, to study engineering and economics on a full scholarship at Swarthmore College in Pennsylvania.

He returned Ghana a year later, but felt "disillusioned" by the military government and was acutely aware of the "stark contrast" to his new life in the US.

He graduated in 1989 and took up a job at Microsoft as a software engineer and program manager, where he met his wife Rebecca, and decided never to return to his home country.

But five years later the couple's son was born, an event, he said, that "changed the way I see the world".

As a "father of an African child", he wondered how his son would see his own identity, and he realised that he "didn't have the power to disown a continent".

He started to consider moving back to Ghana, and thought about he could help to improve the opportunities available there.

"Leadership stood out as the root of what was holding us back," he said.

He noted that the people in positions of influence in Ghana all had tertiary education, but were too focused on self-interest rather than how to benefit wider society.

"I also learned that less than five per cent of college-aged students Ghana, and in Africa, attended college," he said.

"If there is one thing I could do, the most impactful thing would be higher education."

He began his plans to establish Ashesi University, intending to educate "ethical, entrepreneurial leaders".

It was tough to get accreditation and finances were a struggle, but Awuah and his team put their personal savings behind the university.

"We launched in a rented home in Ghana's capital city of Accra, with bedrooms and living rooms converted to classrooms," he said. "In 2002 we opened our doors to 30 students."

Some students quit in the first few

"I AM NOT AN ASTRONAUT, BUT THERE ARE DAYS WHEN I FEEL LIKE I AM AMONG THE STARS"

weeks, unsure of whether the project would survive, but others stayed and worked with the instructors to build the curriculum.

Today Ashesi has nearly 900 students, and is on track to have 1,000 enrolled by the end of next year.

"Half of our students are women, half of our students receive scholarships from the university," Awuah said.

They show "concern for the wellbeing of other and the courage to take on difficult but important tasks," he added.

"It is these skills and values that we believed would make the next generation of great leaders."

Ninety per cent of Ashesi's alumni have stayed in Africa, and nearly all have received job offers, started businesses or enrolled in further education within six months of graduating.

"I am not an astronaut, but there are days when I feel like I am among the stars," Awuah said.

42 (FRANCE)

NICOLAS SADIRAC, CO-FOUNDER AND DEAN, SCHOOL 42

This free computer-programming training program is open to anyone between the ages of 18 and 30, whether they have a degree or not.

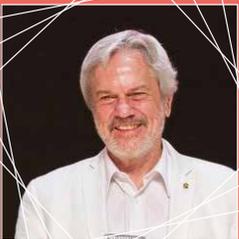Students are selected to study with 42 on the basis of their talent and motivation alone.

There are no classes and no teachers – instead students learn from each other by tackling a specific project in groups. The training usually takes place over a period of three to five years.

42 currently serves 2,500 students, who are training themselves with the aim of becoming the top developers of the future.

"In France we have around 150,000 young people quitting school without any degree, so we decided to help those people," said Nicolas Sadirac, general director and co-founder of 42.

"If you feel like you want to get into IT don't listen to anyone who tells you that you aren't good enough, just try it."

LIGHTS TO LEARN, ORGANIZATION OF AMERICAN-IBERO COUNTRIES (SPAIN)

PAULO SPELLER, SECRETARY GENERAL, ORGANIZATION OF IBERO-AMERICAN STATES FOR EDUCATION, SCIENCE AND CULTURE

A previous WISE finalist, the Lights to Learn project provides schools in rural and marginalised areas in Latin America with electricity and internet access through the installation of renewable energy systems.

This has allowed teachers to build new approaches into their teaching by incorporating ICT, and also means that the school day can be extended as pupils are working in a light and warm environment.

556 rural schools and 26,000 students in Latin America have benefited from the

programme so far, and Lights to Learn also offers technical and vocational education to illiterate adults.

"In Latin America, we still have more than 50,000 rural schools where no electricity at all is provided and therefore there is no internet," said Paulo Speller, its secretary-general. "They are completely isolated.

"We have taken solar energy to schools in 13 countries and at the same time offered them access to teacher training programmes."

ALIX ROBERTSON　　　RESEARCH

Thirteen major research reports debuted in Qatar

Thirteen new research reports were produced in collaboration with experts from around the world for WISE 2017, covering a wide range of topics.

The University of Birmingham looked into 'Meeting the needs of pupils with autism in Qatar', in a study that was the first of its kind for the region.

The findings highlighted a lot of potential to transform the experience of pupils with autism in Qatar, where a knowledgeable community of parents and specialists is supported by the ruling family and government.

Recommendations include making sure autistic people and their families receive better support for the transitions between different stages of schooling and from school to adult services. The researchers also stressed that people with autism should be included in all decisions that affect them.

The UCL Institute of Education and STIR Education meanwhile tackled 'Securing the 21st century teacher workforce'.

The report explored how governments, states, districts, schools and non-governmental organisations in Jordan, Scotland, Uganda, Canada, India and China are working to motivate, develop and retain teachers. The team also put together a set of teacher motivation-focused podcasts and blogs.

Researchers from the World Bank investigated 'Early childhood development in Qatar', providing evidence to show the potential benefits of education from a young age.

Children who attended early childhood education programs in Qatar were found to have better outcomes in literacy, numeracy, socioemotional, and self-regulation skills. These benefits were also carried through to later in life.

Learn Labs looked at school leadership policies in its paper 'Developing agile leaders of learning', examining the impact of leadership on student outcomes and giving suggestions on who to develop, what skills to focus on, and how to design development programmes.

From the US, Andy Hargreaves of Boston College and Michael O'Connor of Providence College produced a report on 'Collaborative professionalism'. They created a map of five approaches to collaboration for different aspect of education, including curriculum, assessment, and children's development.

International design and consulting firm IDEO explored how 'Design thinking' could be applied to education, to reimagine how schools are modelled, and create positive changes in school cultures by changing how people work together.

The Clayton Christensen Institute report on 'Obstacles and opportunities for blended learning in Brazil, Malaysia and South Africa' looked at ways online learning is being used to deliver content in new and more flexible ways.

International development organisation BRAC explored the topic of 'Transition and dropout in lower income countries', focusing on secondary education in Bangladesh and Uganda.

Poverty, parental education, early marriage for girls, and a lack of youth employment, were all factors that were identified as being responsible for pupil dropout rates.

Finally, a report on 'Education for Migrant Children' from the 21st Century Education Research Institute explained the circumstances of migrant children in seven countries around the world and developed policy recommendations to help them learn.

Details of the wise reports on the decline in the educational attainment and retention of boys, inclusive education for children with disabilities and apprenticeships can be found on the *Schools Week* website.

Closing ceremony

ALIX ROBERTSON

The closing ceremony of WISE 2017 brought the best-selling author Chimamanda Ngozi Adichie and WISE chief executive Stavros Yiannouka together to discuss the importance of knowledge in modern society.

They agreed that education needed to be "holistic".

"It has to be about more than just skills and jobs," said Yiannouka.

Adichie agreed, saying education should include learning skills for life, such understating citizenship or empathy.

She runs writing workshops and said what she enjoys most is learning new things as she teaches: exploring a range of literature can help pupils to think about "living in somebody else's skin".

"Storytelling for me is such an essential part of what it means to be educated," she said.

The opportunities for young people should be as broad as possible, Yiannouka continued. He warned that sometimes discussions round education can be limited by "false dichotomies".

"It's not about either or," he said. "It really isn't about skills versus knowledge, or arts versus science – it really should be about both. At the core we need scientists who are sensitised to the humanities and we need humanities scholars who are scientifically literate."

Returning to the theme of the conference's opening session, Yiannouka said that in a "post-truth" society we should stop "naval-gazing" and

Host Yalda Hakim with Chimamanda Ngozi Adichie and Stavros Yiannouka

focus on "what we need to do going forward".

"I see it as a call to arms," he said. "I think if we assert the ethical values on which a good education is founded, then I think we are going to be alright.

"A key value is respect for substantiated truth, the primacy of fact over opinion. It also is about acknowledging competing ideas and understanding that the best way we can resolve that competition is through reasoned discourse and listening to each other."

"A certain kind of healthy scepticism about things" is an important skill for young people, Adichie said, particularly in the age of social media.

"Teach your pupils to ask questions. Say to them that it is very important to be able to forge opinions but those opinions need to be based on the foundation of fact and truth. You don't pull an opinion out of the air and say 'well, it's my opinion'; you have to be able to reason."

Social media is often viewed as a tool to connect people, she added, but it can also be isolating.

"Without even knowing it we are retreating into our own little safe spaces where we read only the things we want to read and that in terms of education is not a good thing."

Summing up, Yiannouka said it is time to "demand our tech giants take on some editorial responsibility".

"I'm not advocating the need for control of information, or censorship, but I think they need to exercise editorial responsibility in the same way a quality newspaper or channel, because they are not neutral," he added.

"I think there's tremendous room for change."

WISE
world innovation summit for education
مؤتمر القمة العالمي للابتكار في التعليم
من مبادرات مؤسسة قطر
An Initiative of Qatar Foundation

VOX POPS

NOOR AL-KOBAISI
Community and communications advisor, ExxonMobil

QATAR

I have been coming to WISE for a couple of years now and I was part of the WISE learners voice programme in 2013. I think I've been learning new things every year and this particular year I really liked what Fareed Zakaria said, it really resonated with me, regarding the need for intellectual discipline, and shutting down all of your technological devices – put it away and pick up a book because now we have so many choices, as opposed to before when he didn't have a TV for example. I liked that the most.

FRANCISCO BARRETO ARAUJO
Chief innovation officer and head of education, Viva Rio

BRAZIL

It has been pretty interesting, you could see a lot of different views on things. The kind of investment that they are doing in education here is amazing, there are American universities here and there is so much happening with the modernisation of Qatar and the education system. I enjoyed having a discussion about artificial intelligence and education – we all know that it is going to revolutionise education. One of the presenters was a science fiction writer who also worked in the field, which was an interesting view. They have chosen the participants well; it's really diverse.

MINQING WANG
Business development manager, Seed for Social Innovation

USA

I have enjoyed it. We have had in depth conversations with people we wanted to meet, we sat down and discussed a lot of things that we really care about. We are interested in impact investing, and are thinking about the development of our institute. We are not just satisfied with a summer camp at Harvard, we want to develop it further and think about how to better cultivate our fellows, and help them make a difference in the world in innovative ways. We are trying to provide more resources beyond the curriculum. It's great to people and collaborate.

AMRAIZ KHAN
Senior staff reporter, The Nation Newspaper

PAKISTAN

It's my first time in Qatar and I have had a very good experience. I come from a third-world country and I understand the importance of education. Education is a key element on the road of progress. I appreciate the initiative of the Qatar rulers to manage this summit at such a huge level. The speakers are very learned people and I have enjoyed it a lot. Patrick Awuah talked about his achievements in education and African countries are lagging behind in education, so I thought establishing a university in Ghana was a big achievement.

NICOLE COMFORTO
Director of strategic partnerships, World Possible

USA

I think it's the largest education conference I have ever been to. I was great to hear different perspectives – I've met teachers from private schools, I've met university professors, I've met lots of people who work for or fund NGOs, and then of course hearing from government leaders has been fascinating as well. There has been a lot of talks where they share new ideas, and those have been very inspiring, but I think my favourite part has been the workshops where you get to talk to people from all of these different places and really work on questions and solutions together.

ABDULLA SNOBAR
CEO and executive director, DMZ

CANADA

I come from Canada. We had the chance to participate in a few different sessions and join some of the panels. I thought it was a fantastic event that brings perspectives from all across the world, it gives you a chance to have a greater network. A lot of it was around innovation in education and obviously funding as well. We talked about scale and going global and what that actually means. We talked about education for all and human rights, and about the contributions from the European to the Middle East and how that plays in positively and negatively.

TWEETS
#WISE17

Marcia Adesina Dyson
@MarciaLDyson
Great opening session w/ HH Sheikha Mozah. An honor to listen to her powerful address on the power of quality education & equipping students to create change.

SherborneQata
@SherborneQatar
A group of Year 7 and 8 pupils participated in a STEM Engineering Lab at #WISE17. They enjoyed the challenge of programming their robot.

Kashaf Bakali
@KashafBakali
1. Academic skills
2. Life skills
3. Thinking skills
4. Doing skills

Lee Araoz
@LeeAraoz
We must teach our students to actively CREATE content with technology, not just passively CONSUME it!!

Jo Besford
@JBesford
"Whatever you can dream - begin it" Inspiring story of @PatrickAwuahJr who is building next generation of ethical African leaders!

Sebastien Turbot
@sturbot
Intelligence is not what you know. It's what you do when you don't know.

Jonathan Schmid
@Schmidjon
"Kids are not born bored - they are naturally curious." If they are bored we are the issue!

Louise van Rhyn
@louisevanrhyn
The key skill that children have to learn today: intellectual discipline. We need to teach kids to turn things off, to focus

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...and more!

About WISE: The World Innovation Summit for Education was established by Qatar Foundation in 2009 under the leadership of its Chairperson, Her Highness Sheikha Moza bint Nasser. WISE is an international, multi-sectoral platform for creative, evidence-based thinking, debate, and purposeful action in education. Through the biennial summit, collaborative research and a range of on-going programs, WISE is a global reference in new approaches to education.

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