

The future of education: a four-way conversation



We have posed some key questions for the future of education to four experts, each with experience of a different part of the world and either a wider or more local perspective:

Rosemary (Rose) Luckin who is Professor of Learner Centred Design at UCL, London, UK

Her research involves blending theories from the learning sciences and techniques from Artificial Intelligence (AI). Rose is author of “Machine Learning and Human Intelligence: the future of education in the 21st century” (2018). Rose is also Director of EDUCATE: a London hub for Educational Technology StartUps, researchers and educators to work together on the development of evidence-informed Educational Technology; Specialist Adviser to the UK House of Commons Education Select Committee for their inquiry into the Fourth Industrial Revolution, Co-founder of the Institute for Ethical AI in Education; a member of the UK Office for Students Horizon Scanning panel, an adviser to the Topol review into the future of the NHS workforce; a member of the European AI Alliance, holder of an International Franqui Chair at KU Leuven; one of the 20 most influential people in Education (Seldon List 2017).

Teresa A. Wasonga who is Presidential Engagement Professor of Educational Leadership at Northern Illinois University, USA

She is a former Fulbright scholar and US Ambassador’s Distinguished Scholar (Ethiopia). She is co-founder of an innovative High School for disadvantaged brilliant girls in Kenya. In addition to teaching and research on leadership in the US, she has done research through Fulbright and (International Successful School Principals Project (ISSPP) in Kenya leading to various publications. Findings from her research are modeled at The Jane Adeny Memorial School (Laboratory of Practice) in Kenyan schools. Teresa was born and attended schools in Kenya where she taught at high schools, teacher training colleges and universities. She has spent time working as visiting professor at University of Gondar, Ethiopia; The Institute for Educational Development-East Africa, Aga Khan University in Dar es Salaam – Tanzania; and The University of Eastern Africa-Baraton, Eldoret – Kenya.

Liz Hollingworth who is Professor of Educational Leadership in the College of Education at the University of Iowa, USA

Her research focuses on issues of leadership, evaluation, and assessment: in particular, how school reform policies affect classroom practice, evaluation, and school administration. Dr Hollingworth has served as the Director of the Center for Evaluation and Assessment since 2015, working with a team of staff and graduate students to conduct multiple forms of program evaluation in collaboration with colleges, universities, and school systems.

Nationally, she is the current Secretary of Division A of the American Educational Research Association (AERA) and has served as the Chair and Past-Chair of the Learning and Teaching in Educational Leadership Special Interest Group of AERA, on the Executive Committee of UCEA, and was awarded the 2015 UCEA Distinguished Service Award for extraordinary commitment, excellence, leadership, productivity, generosity, and service.

Scott Imig who is an Associate Professor in Educational Leadership and Deputy Head for Research in the School of Education at the University of Newcastle in Australia

He is currently working with school principals to develop schools as places of belonging for children from refugee backgrounds. Additionally, Dr Imig is helping schools to become eco-conscious [to go green] as well as with reflective practices and focused conversations to become places where children are excited to learn and teachers are enthused to teach. Dr Imig has previously served leadership roles at the University of Virginia and the University of North Carolina Wilmington where he was an Associate Dean for Outreach and instrumental in creating regional school partnerships as well as military partnerships with the US Marine Corps.

So, to our questions and the answers given:

(1) Given that 3-year-olds entering school at the time this special issue is published in 2020, will graduate from college in the mid-2040's, and work well into the 2070's and 2080's, what are the current strengths of education in preparing students for success in the years to come in your opinion?

Rose - The strengths of education to prepare people for the 2070's and beyond can be found in educational approaches that build within the individual a capacity to cope with change, to understand their own abilities, capacities, knowledge and understanding and an ability to work well with others. The problems we will face are complex and these will require interdisciplinary collaborative problem-solving approaches so education that empowers individuals with these skills is vital.

Teresa - Based on education in the US, I believe the current strengths include access to free and compulsory basic education. I believe that America and other western countries are developed because of the extent to which quality education is accessible. In developing countries, a lot of talent goes to waste, never tapped because money is needed for children to go to school. And where there is access, most schools are without resources to exploit the talent children bring to school. Another strength is that, relatively, most schools in the US have basic resources that enable children to learn about and with technology. Although technology access is limited in developing countries, what is currently available has made remarkable difference. Technology has given many a voice.

Liz - There is an elementary school here in Iowa that serves as the Blueprint School for the state's computer sciences elementary project. At the school, computer programming is woven throughout the curriculum in a visual, intuitive and imaginative way. Kindergarteners program a floor robot using a command sequence to make it go forward, back, right and left. I can see how today's school leaders are working hard to prepare students for a digital literacy that includes computer programming as a required language.

Scott - There are three strengths woven into our current educational system that give me real hope for the future. First, our schools are primarily filled with educators who are passionate about teaching and who genuinely care about the future of each of their students. Second, our children are coming to school more connected, more innovative and more curious than ever before and I think many educators are embracing this reality or at least allowing their students to run with their passions. And, third, in those schools where de facto segregation has not re-emerged, our students are coming to know children from other

backgrounds, other beliefs and other races and this exposure will prepare them for success in life.

(2) Given the same question, what are the current concerns you have of education in preparing students for success in the years to come?

Rose – There is far too much focus on rote learning, on remembering facts, on studying single disciplines and on passing exams. We need a shift to a much more sophisticated epistemology with respect to knowledge. Students need to understand what knowledge is, where it comes from, how they construct it, what good evidence is and when they can feel justified in believing that something is true. They also need to develop a more sophisticated understanding of themselves as learners.

Teresa –

- The digital divide and the fact that the education sector is not doing enough for children from impoverished backgrounds in terms of access to technology, both hard and software. These children will be at a disadvantage when they enter the world of work. This is even a bigger challenge in developing countries where technology is still very expensive and out of reach for many.
- Educational structure continues to mirror the industrial age where children are taught in batches based on age as opposed to other qualifiers such as interests, abilities or maturity.
- The idea of using tests to determine not only levels of knowledge acquired, but also placement in colleges and universities and professions. In other words, education is an instrument for competition and domination rather than collaboration and emancipation.

The mismatch between what education is enabling and what is expected in the world of work has dire consequences, especially for children whose strengths are not defined or identified by tests.

Liz – The biggest concern I have for the future is digital equity. Not every school has the funding or the wifi capacity to fully immerse students in computer science. But digital equity goes beyond devices and on-premises infrastructure. It also has to include professional development for teachers on best practices for incorporating technology into instruction. District leaders also need to address factors that prevent students from completing assignments outside of school – namely, poor internet access. That disparity, known as the homework gap, is increasingly a concern.

Scott – In too many classrooms, our educational system is still based on an outdated model where teachers dispense widely accessible “knowledge” to fairly passive students who are then expected to regurgitate this “knowledge” on quizzes and tests. To make matters worse, we rate and rank students based on how well they can accomplish this. Teachers must rethink their practice to help their students scope and solve local and global problems, work across disciplines, collaborate and innovate, engage with community agencies, present to industry and perform truly meaningful work. I am concerned that many policymakers and educators equate strong performance on year-end tests with a quality education and this 20th century mentality is going to leave a generation of children behind. We need to move from a competitive model that rewards a few high-achievers to one that promotes collaboration. The inequalities that exist between our schools are now as much about pedagogy and curriculum as they are economic and this reality concerns me greatly.

(3) Knowing that the world of work impacts education where do you see education impacting the world of work?

Rose – It is education that has brought us the science and engineering breakthroughs that have enabled the progress of the modern world and I see no reason to think that this will stop. Our human intelligence is still evolving and the way that we use it to innovate and

create will inevitably continue to change the world of work enormously. Technologies such as Artificial Intelligence, quantum computing and blockchain are already causing large changes to the world of work and we have probably only just started to scratch the surface. The jobs children born today will be likely to do will be very different from many of the jobs of today and this progression is brought about through innovations whose roots lie in education.

Teresa – Education and work, to me, influence each other in a cyclic manner. Education should prepare students for the world of work and the world of work should influence the education provided to children. Education should be the channel by which students learn, not just about human dignity but also how to put humanity first. This approach would improve the world of work tremendously.

I also believe that education should help instill values. In other words, schools should be incubators for practicing what we value like democracy, citizenship, caring, humility. I think it is Dewey who suggested that schools should be ideal places to introduce and practice democratic values. These values once mastered through education, will manifest in the world of work. So, the work place will be a mirror of school and vice versa in terms of values.

Liz – There are several high schools in Iowa that have started partnerships with local businesses to provide students with opportunities to intern and work as part of the secondary curriculum. The teachers of those programs have had a tremendous impact on the business partners not only to help them work better with the next generation of workers, but also to help the businesses themselves grow. Opportunities for secondary education to directly touch the workforce will be the most impactful.

Scott – Beyond developing a well-educated citizenry, I think education will continue to provide the ethical compass and soft-skills that businesses desperately need. Talented teachers, as they always have, will develop and promote curiosity, collaboration, empathy, honesty and integrity. These are the traits that will keep our economies growing while also developing corporate citizens that act with concern for their employees, the environment and the greater good.

(4) Finally, as you look into the world of education in 2050, what do you see?

Rose – This is a hard question, because a great deal depends on the decisions we make now. I see enormous potential for good – for the first time in the history of humankind we could provide a quality education to every person in the world using the combined forces of digital technology, human intelligence and artificial intelligence and I find that very exciting. However, those same technological breakthroughs that could give us this positive outcome, could also lead to increased deprivations and suffering through power resting in the hands of fewer and fewer large organizations that use this power to manipulate and control people in unhealthy ways. I see a need for us to make very careful decisions now and to be mindful of the impact they will have on many generations to come.

Teresa – I am very optimistic. I have witnessed a sea of change for the better in places that seemed destined to fail, specifically Africa and third world countries elsewhere. And I believe this change has a lot to do with education and globalization. Distance and barriers to communication, collaboration across continents and ability to show ingenuity have been leveled through technology. Because of the aforementioned, I see the world of education in 2050 as one in which education is customized to individual needs, talents and skills, and the needs of the world of work.

In 2050, I see schools without borders where the world of work is conterminous with the world of education, where children learn everywhere, with each other, and all the time. I see an education world where learning is exciting because students are independent thinkers; have instant access to information; have freedom to choose what, when and how they want to learn; and have access to people with special skills to guide them in ways that enable

them to be critical, reflective, and innovative; therefore able to understand the reality of the world that they intend to impact. I see a world of education where transgression and risk taking are norms, both learners and teachers are self-actualized, and education is truly the practice of freedom.

Liz – I see increasingly diverse schools and (hopefully) universal and equal access to digital resources. I also see a more global world where foreign language acquisition will be critical to communication.

Scott – When I look out to 2050, I am hopeful about the world of education and I know it will look very different than it does today. This thinking is partially driven by faith in the innovative spirit of humans and partially driven by a fear of what will happen if our model of education does not change. When you consider that Google is 21 years old, the Ipad is 9 years old and that Massive Open Online Courses (MOOCS) were launched just 7 years ago, it is safe to say we really have no idea how technology will shape education 30 years from now. But, it is a safe bet that learning will be more personalized yet students will be more interconnected, all students will progress at their own pace and teachers will no longer be the purveyors of knowledge in the classroom. I'm also fearful of the fact that automation and artificial intelligence will mean the end of most low-skilled work in the future and there will be no opportunity in society for uneducated and undereducated citizens. Our education systems will have to evolve to ensure all citizens have the capacity to live meaningful and productive lives.

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