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Education: The Last Frontier
By Rupert Murdoch
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Maurice, thank you for that gracious introduction.

Thank you as well for the invitation to speak today.

We are living through a time when many of our leading economies are not performing as they should.

To this challenge, this audience brings the promise of digital and the spirit of innovation. So I know you are all as pleased as I am that the G-8 leaders have made your contributions to economic growth a priority for their meeting this week.

In particular, I wish to thank President Sarkozy and our French hosts. Not only have they provided this magnificent setting, they remind us of a truth reflected in the proud history of this great nation: that artists and creators add great value to society. We hope the G-8 will strongly affirm that the property rights of artists and creators are more than a matter of protecting cultures. In this new century, they are essential requirements for a dynamic economy and the digital future.

That digital future - and its connection with education - is my topic this afternoon.

Every CEO will tell you that we compete in a world that is changing faster than ever. That it is more competitive than ever and that it rewards success and punishes failure to a greater degree than ever before.

In other words, our world is increasingly, and rightly, a world of merit. In such a world, the greatest challenge for any enterprise is human capital: how to find it, develop it and keep it.

No one in this room needs a lecture about how talented people in tandem with technology are making our lives richer and fuller.

Everywhere we turn, digital advances are making workers more productive - creating jobs that did not exist only a few years ago, and liberating us from the old tyrannies of time and distance.

This is true in every area except one: Education.

Think about that. In every other part of life, someone who woke up after a fifty-year nap would not recognize the world around him.

In medicine, doctors who once diagnosed patients with tools they could fit in their leather bags would be astonished to find their 21st century counterparts using CAT-scans and MRIs.

In finance, brokers who once issued old-fashioned share certificates have been replaced by online brokerages allowing people to trade across the world at any hour of the day.

In my industry, editors who put out newspapers the night before now marvel at the sight of readers getting news delivered to cellphones and tablets.

But not in education. Our schools remain the last holdout from the digital revolution. The person who woke up from that fifty-year nap would find that today's classroom looks almost exactly the same as it did in the Victorian age: a teacher standing in front of a roomful of kids with only a textbook, a blackboard, and a piece of chalk.

My friends, what we have here is a colossal failure of imagination. Worse, it is an abdication of our responsibility to our children and grandchildren - and a limitation on our future. As Stendhal wrote: "Qui s'excuse, s'accuse".

We know the old answer - simply throwing money at the problem - doesn't work. In my own country, we've doubled our spending on primary and secondary education over the last three decades - while our test scores have remained largely flat. The reason this hasn't worked is that more money has fed a system that is no longer designed to educate - it's become a jobs program for teachers and administrators. And yet we Americans wonder why we have cities like Detroit where nearly half the population can't read and the disadvantaged are on a fast-track to failure.

The mandarins of mediocrity will tell you that the problem is that the kids they are teaching are too poor, or come from bad families, or are immigrants who do not understand the culture. This is absolute rubbish. It is arrogant, elitist and utterly unacceptable.

In places such as China and India, they understand that they can't afford excuses. When I visit these countries, I am amazed by how much they accomplish with far fewer resources - and how eagerly they embrace innovation. Their spirit is reflected in the international comparisons, where many of the top performers are Asian and many of those sliding down the middle or bottom are from the industrialized West. The Asian Tigers have the unfair advantage of Tiger Mothers who see in their children the power of potential, not the liability of limits.

Of course, you don't have to be Asian to succeed. In my own hometown, I've been impressed by the Harlem Success Academy - a largely African-American charter school, located in one of the poorest communities in America. The neighborhood surrounding this school has all the pathologies that are generally invoked to explain away failure. But at Harlem Success, they set high standards. They test. They insist that parents check homework. They use technology, including providing a Kindle and a laptop for each student in the higher grades.

And they get results: their students are now achieving scores equal to those attending schools for the gifted and talented.

For example, more than 90% of its students score at the highest level of New York's science tests. And the parents know - that's why they have many more children trying to get in than they have places for them.

That school shows that you can build human capital even in extreme circumstances. But let's be blunt: we don't have nearly enough schools like Harlem Success. And that represents a tremendous loss of human capital that is almost impossible to recover.

If we knew we had a gold mine on our property, we would do whatever it took to get that gold out of the ground. In education, by contrast, we keep the potential of millions of children buried in the ground.

Fortunately, we have the means at our disposal to transform lives.

The same digital technologies that transformed every other aspect of modern life can transform education, provide our businesses with the talent they need to thrive, and give hundreds of millions of young people at the fringes of prosperity the opportunity to make their own mark on this global economy.

This afternoon, I'd like to offer just three examples of how bringing digital innovation to the classroom can substantially improve education for children throughout the world - including many now callously written off as hopeless.

We must begin by exciting the imaginations of our young people. The key is not a computer or a tablet or some other device. The key is the software that will engage students and help teach them concepts and learn to think for themselves.

Every study will tell you that the more interactive and intimate learning is, the better the student will perform.

Let's say I was trying to teach a 10-year-old about Bernoulli's principle. It's named after the famous 18th-century mathematician. According to this principle, when speed is high, pressure is low. Sounds pretty dry. But what if I could link the lesson to the football star Roberto Carlos - whose famous curved shot is an illustration of this principle at work. And suppose I then included an explanation from one of the world's leading airplane engineers about how this same principle works in aviation.

Some businesses who are looking ahead are already giving us an idea of what this would look like. In two small schools in California, a traditional textbook publisher has partnered with Apple to teach algebra. They've given the kids free iPads, and they've created an app that gives students guided instruction, instant feedback on practice questions, and access to several hundred videos. If students don't understand the lesson the first time, they can watch that lesson repeatedly until they get it.

Is anyone surprised that the teachers say the students using this new algebra program are testing better than those who don't?

Exciting young imaginations leads directly to my second point: more personalized learning.

In media and technology, we have learned how to micro-target audiences - to maximize the stickiness of our websites, to personalize our news feeds. Now we need to bring these kinds of expertise to education - to make mathematics sticky - to micro-target the 8th grade girls who might want to be physicists, and to personalize the reading for each student.

If a gifted child can finish a four-year course in two years, shouldn't we encourage her? Likewise, if a struggling child needs more time, shouldn't we help him too?

Unfortunately for too many students in too many classrooms, it's still one-size- fits-all.

Ask teachers how that's working out. Ask them about the challenge of dealing with 30 kids in a classroom, each of whom is an individual who goes at his own pace and has his own best way of learning. Right now most students are stuck going over the same lesson plan in the same way at the same pace. That only frustrates the kids who could do more advanced work - while leaving behind those who can't keep up.

Let's consider a student trying to understand fractions. There are many different ways to teach children fractions - all of which work for some kids, and don't work for others. Why should we be limited? Why can't we use digital technology to give teachers the choice of all of them?

For example, for some children the best answer will be an online tutor who guides them every step of the way. For others, it might be a cartoon produced by the world's best animators illustrating how fractions represent parts of a whole. For still others, it could be listening to the nation's best math teacher laying out problems that the child answers at his own pace, under the supervision of a classroom teacher. The key is the ability to analyze where children are in their learning and what they need to move ahead.

We already have one program like this that we put on an iPod. It's been used at schools for American children on the military base at Okinawa. With this program, a teacher can instantly diagnose where a child is in his or her reading - and then produce a customized textbook for the next ten days. The parent can check it at any time to see how much his child is learning.

I promise you, this is only the beginning. Everywhere else in our economy, digital is forcing businesses to let their customers customize their clothing, their cuisine, their news, and most anything else they want to buy. My challenge for everyone in this room today is to help us do the same for a child's education.

Finally, with digital we can bring the world's greatest thinkers to every student, anywhere in the world, at a very low cost.

Outside the classroom, digital has already done this. Not so very long ago, you had to be rich to hear the best opera or symphony. Now you can now download the world's best recording of your favourite Mozart concerto for about a dollar. And you can listen to it as often as you want. So if there were one teacher in Brittany who came up with the best course for teaching French history, there's no reason why this

course should not be immediately available to every student anywhere in France - or Vietnam for that matter.

Come to think of it, there is no reason that a student anywhere in the world - in Beijing, Boston, or Berlin - should not have access to the physicist Stephen Hawking explaining science; the cellist Yo-Yo Ma explaining harmony; the historian Andrew Roberts explaining Churchill; the Nobel-winning economist Amartya Sen explaining economics and so on. All these people could be brought into any classroom around the world for what we now pay to download a song.

I know the critics say that if you introduce technology to the classroom, you are simply replacing teachers with computers and blackboards with screens. But the critics are wrong.

Technology will never replace the teacher. What we can do is relieve some of the drudgery of teaching. And we can take advantage of the increasingly sophisticated analytics that will help teachers spend more time on the things that make us all more human and more creative.

Let me be clear. What I am speaking about is not the outline of some exotic, distant, fictional future. Everything I have mentioned is something I have seen in the here and now:

- In Korea, I was astonished to learn that a vibrant, \$30 billion consumer market for after-school education has transformed outstanding teachers into national celebrities - with some commanding the same salaries as sports heroes and film stars.
- In Sweden, I visited an innovative school known as the "IKEA school." Learning is supported by a "knowledge portal" that contains the entire syllabus. In this school, learning fits the individual student's pace and interests - and the teachers give students plenty of individual attention. This school is possible because of a system that encourages competition by letting parents use public money to choose what schools they think work best for their children. That includes schools that are privately-run and for-profit.

- Back in my own hometown, I visited the "School of One." Like Google, this New York school is powered by an algorithm. Every day, it figures out what each individual needs to learn next and how best he or she will learn it. One day I asked a child who was helping him with his work - it turns out the boy was working with an online tutor from Mumbai.
- Another student, in the middle of the year, was supposed to be in 8th grade math. But he was mastering the subject so quickly he had already moved onto 9th grade math.

Right now, these are just bits and pieces. Our challenge is to learn from what works best - wherever in the world we find it - and put it all together.

My company is determined to try - in a big way.

My challenge to you this afternoon is to bring your own skills to the table. The world needs you to bring to our schools the same creative force that makes businesses competitive and nations thrive.

In doing this, we will supply our economies with all the talent and energy they need to grow. In doing this, we will ensure that the poor child in Manila will have the same opportunities as a rich child in Manhattan. In doing this, we will elevate the status of good teachers everywhere - excite the undeveloped minds of our young and ensure that no child will be left on the margins of the great prosperity this global economy offers.

In our own backyards, we have millions of young people whose minds are the key to our future. It is time to insist that our schools use every technology we can to unlock their potential - and treat them as the precious resource they are.

Thank you.