RSA

RSA/Edge Lecture: Changing Paradigms - How we implement sustainable change in education

Speaker: **Sir Ken Robinson**
Creativity Expert

Chaired by: **Matthew Taylor**
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Date: 16th June 2008

Venue: RSA, 8 John Adam Street, London WC2N 6EZ

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Matthew Taylor: This is the final RSA Edge lecture in a series which has focussed in raising standards in education. Each of the debates has identified areas for change. The RSA itself has been at the forefront of innovation and change in the education sector for many years.

We are continuing with the success of 'Opening Minds', a three-year pilot in schools using a competence-based curriculum, based on individual's needs. The project continues to change the way that learning is organised in schools in order to make it more relevant to the demands placed on it by life in the 21st century. As part of our commitment to changing education, we are sponsoring an academy in Tipton in the West Midlands.

I think 'Opening Minds' is now being taken up by around 200 schools across England and one of the greatest things about 'Opening Minds' is that if you go to a school that is using it, they will often, usually won't describe it as RSA 'Opening Minds', they will give it their own name. It has been adapted by schools to their own purposes as a framework.

But the real point of tonight is to introduce you to our marvellous speaker, Sir Ken Robinson. Sir Ken is an internationally renowned expert in the field of creativity and innovation in business and education. He led the British Government's 1998 Advisory Committee on Education and was knighted in 2003 for his achievements.

You may have seen, and if you have, you are amongst the hundreds of thousands of people around the world who have seen, his inspirational TED talk on 'Creativity'. Sir Ken's 2001 book, *'Out of our Minds: Learning to be Creative',* explains why it is essential to promote creativity and copies are available to purchase outside the auditorium.

This evening Sir Ken will give the final RSA Edge lecture on 'Changing Paradigms', how we implement sustainable change in education.

But tonight's event is also the RSA Benjamin Franklin Medal Lecture. The Benjamin Franklin Medal was first awarded in 1956 to commemorate the 250th anniversary of Franklin's birth and the 200th anniversary of his membership of the RSA. Today the medal is awarded to a global big thinker; someone who has shifted public debate in an innovative way and who has contributed to furthering public discourse about human progress.

I am delighted now to formally announce the award of the 2008 Benjamin Franklin Medal to Sir Ken Robinson and please join me in welcoming RSA Chairman, Gerry Acher, who will present the medal. Gerry.

Gerry Acher: One of the most pleasurable jobs of the RSA is presenting the Benjamin Franklin Medal and I am thrilled to be able to present it to you for everything you have done and everything that I know you are doing and will continue to do. You follow in the footsteps of David Puttnam, Marjorie Scardino, Jonathan Ive and you are a really worthwhile and exciting recipient of this award and to have the pleasure of listening to you shortly makes it absolutely thrilling. Thank you very much indeed.

Sir Ken Robinson: Thank you very much. Were you surprised when it was actually me that got the medal? Were you? You could feel the tension building, couldn't you? Who will it be? Thank you. I am genuinely humbled to have this award.

I was thinking earlier that being humbled isn't a normal feeling, is it? I don't often feel humbled. Disparaged, humiliated, you know, put down, but humbled is a rather old feeling, isn't it? It is not a modern emotion and particularly to have this award in the name of Benjamin Franklin who was the most remarkable man.

He lived nearby in Craven Street. The house is a few minutes away and I really recommend that you go and take a look at it. It is has just been opened, just been renovated. It is a very powerful evocation of the life of this extraordinary figure. A man who was deeply involved in the growth of industrialism, at the heart of the Enlightenment, at the heart of the creation of the New World and with a passion for education.

A man who is also deeply interested in science, in the arts, in the humanities and in politics. A polymath, I think, a Renaissance figure in the heart of the Enlightenment and one of the first significant members of the Royal Society of Arts. If you don't know this institution, I really encourage you to find out more about it.

It was founded, I think I am correct in saying, in 1753, by William Shipley and its full name is the Royal Society for the Encouragement of Arts, Manufactures and Commerce. It has had a long history in the promotion and advocacy of appropriate forms of public education.

I have had a long association myself with the RSA. I gave a lecture here, even Matthew may not know this, in July of 1990, in this very room and I propose to repeat it word for word if that is all right. I don't see why I should waste time thinking up anything fresh for you frankly.

No, in 1990, I had been running a National Arts in Schools project and I had published a book on the Arts in Schools. I have a great passion for the arts and we were meeting here shortly after the introduction of the National Curriculum in England, which profoundly misunderstood the place of the arts in education. So I was talking about how the arts could be made part of the mainstream of education.

Here we are 17 years later when it is all so different I feel. So I want to say a few words about that and I want to show you a couple of short movie clips and then to have a conversation with you.

One of the things that has happened to me since 1990 is that I have moved to live in America and I moved there seven years ago at the invitation of the Getty Centre. I didn't flee Great Britain but put yourself in my place. I had a phone call on the 3rd January 1990 when I was living near Coventry. This guy said, "Would you like to come and live in California?" We left immediately.

I didn't ask what the job was, we just went. The phone is still swinging on the hook actually in the house and we hope one day the children will track us down but we don't care.

But I now live in America and I love it. Who has been to Los Angeles here, anyone? It is an extraordinary place. We were in Las Vegas recently, my wife and I. We've been together for 30 years and we decided last year to get married again so we went to the Elvis Chapel. No, I recommend it. You should do it. We had the Blue Hawaii package but there are others. But with the Blue Hawaii package you get the Elvis impersonator, four songs, the chapel of course, a puff of smoke as you go in. You have to request that. And a hula girl, that was optional but I opted for it and, for reasons I was rather pleased about frankly. For another $100 we could have had a pink Cadillac, but we thought that was a bit tacky. We thought that was lowering the tone of the whole occasion frankly, but I mention it because Las Vegas is an iconic example of the thing I would like us to talk about, not Las Vegas itself, but the idea that gave rise to it.

If you think of it, every other city on earth has a reason to be where it is. Like London, it is in a natural basin, so it is good for trade, or it is in a harbour, or it is in a valley so it's good for agriculture, you know, or it's on a hillside so it is good for defence. None of this is true of Las Vegas. There is no physical reason for it to be there. The only reason it is there is the thing that gave rise to this organisation that affects very aspect of your life, which makes humanity what it is. The only thing, in my opinion, which is the extraordinary power which is bestowed on human beings that no other species has, as far as we can judge.

I mean the power of imagination. We take it totally for granted. This capacity to bring into mind things that aren't present and, on that basis, to hypothesise about things that have never been, but could be.

Every feature of human culture, in my view, is the consequence of this unique capacity. Now other creatures may have something like it. Other creatures sing, but they don't write operas. Other creatures are agile but they don't form Olympic committees. They communicate but they don't have festivals of theatre. They have structures but they don't build buildings and furnish them. We are unique in this capacity, a capacity that has produced the most extraordinary diversity of human culture, of enterprise, of innovation. 6,000 languages currently spoken on earth and the great adventure which produced, among other things, the Royal Society of Arts and all of its works.

But I believe that we systematically destroy this capacity in our children and in ourselves. Now I pick my words carefully. I don't say deliberately, I don't think it is deliberate but it happens to be systematic. We do it routinely, unthinkingly, and that is the worst of it because we take for granted certain ideas about education, about children, about what it is to be educated; about social need and about social utility, about economic purpose. We take these ideas for granted and they turn out not to be true.

Many ideas which seem obvious turn out not to be true. That was really the great adventure of the Enlightenment; ideas that seemed obvious that turned out not to be true. Ironically though I believe the legacy of the Enlightenment is now hampering the reforms that are needed in education.

We have grown up in a system of public education which is dominated by two ideas. One of them is a conception of economic utility and you can illustrate that directly. It is implicit in the structure of the school curriculum. It is simply present. There is in every school system on earth a hierarchy of subjects. You know it, you went through it. If you are in education you probably subscribe to it or you contribute to it somehow.

When we moved to America we put our kids into high school and it was recognisable, the curriculum was totally recognisable. Maths, Science and English Language at the top; then the Humanities and the Arts way down the bottom and in the Arts there is always another hierarchy, Art and Music are always thought to be more important than Drama and Dance.

There isn't a school in the country that I know of, sorry, a school system, let me be clear. There isn't a school system actually anywhere that teaches Dance every day, systematically, to every child in the way that we require them to learn Mathematics. Now I am not against Mathematics. On the contrary, but why is Dance such a loser in the system?

Well I think one of the reasons is, people never saw any economic point in it. So there is an economic judgement that is made in the structure of the school curriculum. I am sure it was true of you, you probably found yourself benignly steered away from things you were good at at school, towards things that other people advised you would be more useful to you.

So effectively, our school curricula are based on the premise that there are two sorts of subject; useful ones and useless ones. The useless ones fall away eventually and they fall away especially when money starts to become tight, as it always is.

George Bush was in town today, wasn't he? I just thought I would share the pain, that was all. I am feeling it. No, President Bush, as I call him, was responsible, with others, for a cross-party piece of legislation in America to reform public education. I have lots of conversations about it now I live in America, which I shall keep saying by the way, to make you feel bad. Okay, I live in California … and you don't, so there you go.

When I got to America I was told that the Americans don't get irony. This is not true, this is a British conceit. I feel okay about it because there are other one, when we went to America we were given a guidebook about *'How to Behave in America'*, honestly, by our removals agent. *'How to Behave in America'* I'm handing it out to all the Americans I meet now, you do it, you do it, let's all behave properly shall we?

But one of the things it said in it was don't hug people in America, they don't like it. Honestly, it was explicit, they don't like it. This turns out to be nonsense. They love it. People in my experience love getting hugged in America but we thought they didn't so for the first year we kept our arms to our sides at social functions for fear of giving offence and this all added to the idea that we typified British reserve or that we were some refugees from 'Riverdance', you know.

But I was told the Americans don't get irony and then I came across this piece of legislation in America called 'No Child Left Behind', and I thought, whoever came up with that title gets irony because this legislation is leaving millions of children behind. Of course, that is not a very attractive name for legislation, 'Millions of Children Left Behind' I can see that but give or take a twiddle, it's the 1988 Education Act in this country.

It was the manifesto pretty much that inspired the work of Chris Woodhead, I believe, during his time at Ofsted. Now I think this is important because what it represents to me is the ideology of education writ large and that is the problem.

So I am going to be talking about changing paradigms. My firm conviction is that we have to do much, much more than is currently happening. Every country on earth at the moment is reforming public education. I don't know of an exception. Mark you, what's new? We have always been reforming public education but we are doing it now consistently and systematically all over the place.

There are two reasons for it. The first of them is economic. People are trying to work out, how do we educate our children to take their place in the economies of the 21st century given that we can't anticipate what the economy will look like at the end of next week, as the recent turmoil is demonstrating. How do we do that?

The second though is cultural. Every country on earth is trying to figure out how do we educate our children so that they have a sense of cultural identity and so that we can pass on the cultural genes of our communities while being part of the process of globalisation. How do we square that circle?

Most countries, I believe, are doing what we were doing in 1988. Operating on the premise that the challenge is to reform education to make it a better version of what it was. In other words, the challenge is just to do better what we did before but to improve and we have to raise standards.

And people say that we have to raise standards as if it was a break-through. You know, like really, we should. Why would you lower them? I haven't come across an argument that persuades me of lowering them but raise them? Of course we should raise them.

The problem is that the current system of education, in my view and experience, was designed and conceived and structured for a different age. It was conceived in the intellectual culture of the Enlightenment and in the economic circumstances of the Industrial Revolution. Before the middle of the 19th century, there were no systems of public education. Not really, you know, you could get educated by Jesuits if you had the money but public education, paid for by taxation, compulsory to everybody and free at the point of delivery, that was a revolutionary idea. Many people objected to it. They said, "It's not possible for many street kids, working class children, to benefit from public education. They are incapable of learning to read and write and why are we spending time on this?"

So there is also built into it a whole series of assumptions about social structure and capacity. But it was designed for its purpose, which was why, as the public system evolved in the 19th and early 20th century, we ended up with a very broad base of elementary education, junior schools. Everybody went to that. My father's father, my grandfather, he went to that. He left school by the time he was 12. Most people did then at the turn of the century. Then gradually we introduced a layer above it of secondary education and some people went into that but my father left school at 14 having gone into that.

Then a small university sector sat across the top of it and the assumption was that people would work and a few would get to the top and would go to university. It was modelled on the economic premises of industrialism. That is, that we needed a broad base of people to do manual blue-collar work; you know, roughly they could do language and arithmetic. A smaller group who could go to administrative work, that is what the grammar schools were for and an even smaller group who would go off and run the Empire for us and become the lawyers and the judges and the doctors and they went to the universities.

Now I simplify, but that is essentially how the thing came about and it was driven by an economic imperative of the time, but running right through it was an intellectual model of the mind, which was essentially the Enlightenment view of intelligence. That real intelligence consists in the capacity for a certain type of deductive reasoning and a knowledge of the Classics originally, what we come to think of as academic ability.

This is deep in the gene pool of public education that there are really two types of people, academic and non-academic. Smart people and non-smart people and the consequence of that is that many brilliant people think they are not because they have been judged against this particular view of the mind.

So we have twin pillars, economic and intellectual and my view is that this model has caused chaos in many people's lives. It has been great for some. There have been people who have benefited wonderfully from it but most people have not and it has created a massive problem.

I spoke at a conference a couple, well the TED conference that Matthew referred to. One of the other speakers was Al Gore, or Al as I refer to him. Al Gore gave the talk at the TED conference; by the way if you don't know the TED conference I do recommend you visit the website, TED.com. It is fantastic. But Al Gore gave the talk that became the movie, 'Inconvenient Truth'.

Al Gore's view, which isn't his, he would be the first to say it. It dates back to Rachael Carson and earlier. It actually dates back if you look, even to the work of Linnaeus in the 18th century. It dates back to Franklin. It dates back to the work of this Society. A concern with the ecology of the natural works and the sustainability of industrialism in the 17th and 18th century we were concerned about it.

But his work is an attempt to put the case back into a modern context. I believe he is right and it is not just his view. A group of geologists have just published a paper in which they argue that the earth has entered a new geological period. Classically the view is that since the end of the last Ice Age, about 12,000 years ago, we were in a period called the Holocene period.

They believe we have entered a new period and they say if people were to, a future generation of geologists were to come to earth, they would see the evidence of it, of a change in the earth's geological personality. They would see it in the evidence of carbon deposits in the earth's crust, the acidification of oceans, the evidence of a mass extinction of species, the change in the earth's atmosphere and a hundred other indicators. They say it is unmistakably, in their view, a new geological period. And a series of Nobel scientists have agreed to this view. They are provisionally calling this not the Holocene but the Anthropocene. What they mean by that is a geological age, created by the activities of people, as in Anthropoids. And they say there is no historical precedence for this and this is really what I want to get to.

Benjamin Franklin, Thomas Jefferson, William Shipley, the great figures of the Enlightenment, both in politics and science and the Arts, were conceiving public education and civic structures and politics of duty at a time of revolutionary turmoil. It was the age of revolutions in France, in America, not long after our civil disturbance here, at a time of extraordinary intellectual adventures and new horizons; extraordinary innovation. For them there was nothing really that ever led to an age of such innovation and such extraordinary change, the rate of it and it was a fair characterisation of the times.

But there is every evidence to show now that what was happening then is as nothing to what is happening now. I believe the changes taking place on earth now are without precedent in terms of their character and their implications. And our best salvation is to develop this capacity for imagination and to do it systematically through public education and to connect people with their true talents. We simply can't afford this devastation any more.

So when Al Gore talks about this, I believe him. And I think if you don't believe there is a crisis in the world's natural environment, then you are not paying attention and I would take the option to leave the planet soon.

You see, I believe that there is a parallel climate crisis. Now one of them is probably enough for you honestly. You might think, 'No, I am fine, one is good.' You know, 'I don't need a second one.' But there is a second one and it is what my work is about and I guess what many of you will be concerned about and I know what Edge is concerned about and what Matthew and the RSA is currently concerned about, but let me put it in a particular way to you.

I believe there is a global crisis, not in natural resources, though I believe it, a global crisis in human resources. I believe that the parallel with the crisis in the natural world is exact and the cost of clearing this up are catastrophic.

I will give you a couple of quick examples: in California the State Government last year spent about $3 billion on the State University system, this is their published figures. They spent over $9 billion on the State Prison system. Now I cannot believe that more potential criminals are born every year in California than potential college graduates. What you have are people in bad conditions going bad.

I remember Bernard Levin once, he wrote in one of his articles in *The Times*, he said he had been at a dinner party and he was asked, the question round the dinner table was, "Are people mainly good or mainly bad?" He said, without hesitation, "They are mainly good." He said, "I was astonished to find I was in a minority around the table, I was in a minority of one."

But he believed with Victor Frankel, who survived the Holocaust, and saw his parents die, that for all of that people are fundamentally good. I believe they are fundamentally good but there are people living in very bad circumstances and conditions and if you put people in poor conditions they behave in particular ways.

So we spend a lot of our time remediating the damage and meanwhile I believe that the other exact parallel is that pharmaceutical companies are reaping a Gold Rush from this distress. If you look at the growth of antidepressants, prescription drugs to treat depression, to suppress people's feelings, this is a Gold Rush. I mean pharmaceutical companies don't want to cure depression, on the contrary.

I mean also, one of the figures I saw recently is that suicide rates among 15 – 30 year olds have increased over 60% globally since the 1960s. It is one of largest causes of death among young people. I mean, what is that? People born with hope and optimism who decide to check out because they can't cope.

Now I don't say education is a part of that, or responsible for it, but it contributes to it. That is really all I want to say. So this crisis of human resources is, I think, absolutely urgent and palpable.

So the challenge for me is not to reform education but to transform it into something else. I think we have to come to a different set of assumptions.

Now, I say this advisedly because I have been involved in all kinds of initiatives over my professional life. I started out in drama work, I moved, I ran a big Arts and schools project. Some of the people in the room I have known for years and I've worked with for years and I've had a long association here.

One of the great initiatives of the RSA in the 1980s was 'Education for Capability'. You should look at 'Education for Capability', it said extraordinary useful and practical things and there were wonderful people around it. Charles Handy, who I have got to know recently, well not recently, but who I have got to know well in recent years, who was Chairman here of the RSA. Tyrell Burgess, Corelli Barnet, Patrick Lutchens, I shared an apartment when I was a student with Patrick's son and a kind of, a galaxy of really powerful thinkers.

John Tomlinson, who are Chairman here for a while, who was with me at Warwick University. There has been a long tradition of arguing for the change, arguing for the alternative and yet successive Governments come in and do what they did before. And this really worries me, and I speak personally. After all the optimism I felt ten years ago, I feel that we've had, over the past ten years, a kind of myriad policies but too few principles.

I can't see what they have added up to and I say that because I didn't see it before and I don't see it anywhere else. I mean, there are some countries which I feel are getting this right but was are not and the reason is because we are not fundamentally changing the underlying assumptions of the system which are to do with intelligence, ability, economic purpose and what people need.

We still educate people from the outside in. We figure out what the country needs and then we try and get them to conform with it rather than seeing what makes people drive forward and building education systems around a model of person-hood, which I think is what we should come to.

So let me just, I just want to show you a couple of quick slides to, … I don't have to, but as I've gone to the trouble of preparing them … frankly, I just want to give you an example of a couple of things here. Oh, by the way, some of these things, as Matthew kindly said, are in this book.

This book, by the way, is terrific. You could not do better than buy this book. That is, unless you buy this book, which is the new book which is coming out in January from Penguin. I am very excited about this book. This book is about the nature of human talent and how people discover it. It is based on the premise that people do their best when they do the thing they love, when they are in their element.

So I was trying to get to grips with what that is. What is it to be in your element? I spoke to scientists and artists and business leaders and poets and parents and kids and it seems to me the evidence is absolutely persuasive. When people connect this powerful sense of talent within themselves, discover what it is they can do, they become somebody else and that to me is the premise of building a new education system. It is not about reinforcing the old model but reconstituting our sense of self and it happens to synergise, is that a verb, I'm not sure, with the new economic purposes.

There are two big drivers of change currently; one is technology, you know that. This is a brain cell; what I just want, I'm not going to dwell on it but what I just want to underline is that technology is moving faster than most people really truthfully understand.

Can I ask you, how many of you here consider yourself to be 'baby boomers' or older? I thought so. Who is not? Who considers yourself to be a generation X-er or a millennial? Okay. You boomer types and older … no, actually, if you are over 30, would you put your hands up if you are wearing a wrist watch … there we go, thank you, just curious. No, this is interesting. Ask a roomful of teenagers the same question, ask them if they wear wristwatches and they mainly don't.

The reason is, I want to make two points, the reason they don't wear wristwatches is because they don't see the point because for them time is everywhere. It is on their i-phones, their i-pods, their mobile phones, it is everywhere. No, why would you wear this. My daughter can't understand me; why I would put a special device on my wrist to tell the time. And she said, "Plus, this only does one thing."

So then it's like, how lame is that? A single-function device, so have you cracked up … but we take it for granted don't we? You have other options but this thing about taking it for granted is important. It is the things we take for granted that we need to identify and question. I mean did you think about putting your watch on this morning. Truthfully, was it like an agony? Shall I? You know, is it a watchy day? I'll put it on to be safe. You don't, do you? You just do it.

Our kids don't and it points to something important. A guy called Marc Prensky made this point that our children live in a different world. He talks about the difference between digital natives and digital immigrants. If you are born, if you are under 20, you are a native. You speak digital. You were born with this stuff and it is in your head like a first language. We are less so.

But the point is, this is getting faster and faster and faster. One of the new horizons is likely to be the merging of human intelligence with information systems. That is a brain cell and that is a brain cell growing on a silicone chip. Well, we'll see.

But there are things that lie ahead for which there are no precedent and they impact on culture. It promises to be extraordinary.

This is the other thing I want to point to, which is the curve of the world's population; you see, 1750, when the RSA was being established and William Shipley was wondering what to do in the evenings, there were about a billion people on the whole of the earth. Pretty evenly distributed; mostly in the far-flung parts of what became the Empire, but a lot of them in what were to become the industrialised economies. About a billion people; London was a tiny place by comparison.

Now, if you look at this curve, we are about six billion and the big jump happened in 1970, well from 1970 to the year 2000 where the population of the earth increased by 3 million. 1968 you will remember was the summer of love. It is probably a coincidence but we all did our bit. But the interesting thing, the dark line is the growth of population in the developed economies. The real growth is happening in the emergent economies; in Asia, Africa, parts of

South America and so on and it's heading to nine billion.

The other thing that is happening is that the world is becoming increasingly urbanised. At the beginning of the 18th century into the 19th century, most people lived in the countryside. About 3% of people lived in the cities. Of course, the great social movement of industrialism was the migration to the cities but even so, at the turn of the 20th century it was still something less than 20% of the people lived in cities.

Currently 50% of the world's population lives in cities. 50% of the six billion and we are heading to 60% of nine billion people living in cities, not here, not in the UK, not in America, not in the rest of Europe but in the emergent economies. Now this massive migration is without precedent. So these aren't going to be groovy cities with information booths and property taxes and Starbucks; these are massive, sprawling, vernacular cities. Probably more like this.

This is Caracas in Venezuela, a massive and rapidly growing metropolis. But greater Tokyo at the moment has a population of 35 million people which is more than the entire population of Canada in one place. By the middle of the century there may be twenty mega-cities, over 500 cities over a million. You can see my point here that these are unprecedented circumstances, an unprecedented drain on the earth's resources and an unprecedented demand for innovation, for fresh thinking, for fresh social systems, fresh ways of getting people to connect with themselves and have lives with purpose and meaning.

Education is a major part of the solution. The problem is, I believe we are backing the wrong horses. There was a report by McKinsey recently which showed this. These are American figures. In America since 1980, more or less, spending on education has increased 73% in real money, class sizes have gone down to historically low levels but on this indictor, literacy, there has been no change in achievement. More money, smaller classes, no change; drop-out rates are increasing, graduation rates are declining. It is a major problem.

The problem is, they are trying to meet the future by doing what they did in the past and on the way they are alienating millions of kids who don't see any purpose in going to school. When we went to school, we were kept there with a story, which was if you worked hard and did well and got a college degree, you would have a job. Our kids don't believe that and they are right not to by the way. You are better having a degree than not but it is not a guarantee any more and particularly not if the route to it marginalises most of the things that you think are important about yourself.

One of the things that sits right in the middle of this is this idea that there are academic and non-academic kids. That there is something called vocational training, which is not as good as academic education; that people with theoretical degrees are inherently better people than those who can do real craft and the kind of work which previously would have been venerated in Guild systems. We have this intellectual apartheid running through education and so lots of people try to defend it or to repair it. I think we just have to recognise that it is mythical and we have to strip it out of our thinking.

This is one of the consequences of it. Let me ask you another question: how many of you who are not, how many of you over

30 have had your tonsils removed? Be frank with me. Okay, I ask you this for a reason. Again it is things we take for granted. People of my generation, I was born in 1950. Now I know you don't believe that, I can see the sense of incredulity sweeping the room, how could it be, you are saying to yourself? Well, I live in Los Angeles, I've had work done, what can I tell you?

No, but, people of my generation, in the 50s and 60s and in the 40s, I guess, the minute they had a sore throat, somebody pounced on them and took their tonsils out. That is true isn't it? It was routine to have your tonsils removed. You could not afford to have a ticklish cough in the 1950s or somebody would reach for your throat in a premature way and remove your tonsils. It was routine. Millions of tonsils were removed in that period. What happened to them? We don't know. I believe it's a scandal, I don't know. It is one of those things like Rockwell, like Area 56, you know, somewhere in America, in a desert, there is this stockpile.

Anyway, the thing about this is this, nowadays people do have tonsillectomies but it is not common, it is unusual to have it done. You have to have a chronic case with no hope of it being repaired in some other way, to have your tonsils taken out. When I was growing up they were thought to be totally disposable. We'll just whip them out and not have any more nonsense about them and some people voluntarily had it done so that they could get the ice cream.

Our children, this generation, do not suffer the plague of tonsillectomies. Instead they suffer this. This is the modern epidemic and it is as misplaced and it is as fictitious. This is the plague of ADHD. Now this is a map of the instance of ADHD in America, or prescriptions for ADHD. Don't mistake me, I don't mean to say there is no such thing as Attention Deficit Disorder. I am not qualified to say if there is such a thing. I know a great majority of psychologists and paediatricians think there is such a thing but it is still a matter of debate.

What I do know for a fact is it is not an epidemic. I believe that these kids are being medicated as routinely as we had our tonsils taken out and on the same whimsical basis and for the same reason, medical fashion.

Our children are living in the most intensely stimulating period in the history of the earth. They are being besieged with information and calls for their attention, from every platform; computers, from i-phones, from advertising hoardings, from hundreds of television channels and we are penalising them now for getting distracted. From what? Boring stuff, at school, for the most part.

It seems to me that it is not a coincidence totally that the instance of ADHD has risen in parallel with the growth of standardised testing.

Now these kids are being given Ritalin and Adderall and all manor of things, often quite dangerous drugs, to get them focused and calm them down. Now, I know this is nonsense, immediately you see this thing. Because the light areas are where there isn't much of it. Now, I live in California and people there won't pay attention for more than a minute and a half, you know, so … but according to this Attention Deficit Disorder increases as you travel East across the country. People start losing interest in Oklahoma … they can hardly think straight in Arkansas and by the time they get to Washington they have lost it completely, and there are separate reasons for that I believe.

It is a fictitious epidemic. I was saying earlier, I have a big interest in the Arts and, if you think of it, the Arts, and I don't say this exclusively to the Arts, I think it is also true of Science and of Maths. I say it about Arts particularly because they are the victims of this mentality currently, particularly.

The Arts especially address the idea of aesthetic experience and aesthetic experience is one in which your senses are operating at their peak. When you are present in the current moment, when you are resonating in the excitement of this thing you are experiencing, when you are fully alive. And anaesthetic is when you shut your senses off and deaden yourself to what is happening and a lot of these drugs are that. We are getting our children through education by anaesthetising them.

I think we should be doing the exact opposite. We shouldn't be putting them asleep, we should be waking them up to what they have inside themselves. But the model we have is this, I believe we have a system of education that is modelled on the interests of industrialism and in the image of it.

I will give you a couple of examples. Schools are still pretty much organised on factory lines; ringing bells, separate facilities; specialised into separate subjects. We still educate children by batches. We put them through the system by age group. Why do we do that? What is there this assumption that the most important thing kids have in common is how old they are?

It is like the most important thing about them is their date of manufacture. Well I know kids that are much better than other kids at the same age in different disciplines. You know, or at different times of the day; or better in smaller groups than in larger groups. Or sometimes they want to be on their own. If you are interested in the model of learning, you don't start from this production-line mentality.

These are some of the key words in the industrial model. Utility, which shapes the curriculum; linearity, which informs choices and the assumptions of what matters and what doesn't. It is essentially about conformity and increasingly it is about that as you look at the growth of standardised testing and standardised curricula. And it is about standardisation.

Now for reasons that we will come to just before we're done, I believe we've got to go in the exact opposite direction. That is what I mean about changing the paradigm. We have to question what we take for granted. The problem with questioning what we take for granted is that you don't know what it is.

Just have a quick read of this. I love this quote, this, as you can see is from Bertrand Russell and it seems to me to be the quintessential question of western philosophy. You know, when it comes to it, what is this? You know, are we all that Hamlet thought we were or are we just a cosmic accident of no importance.

I got really interested in this first part of the question. This small and unimportant planet. Well how small? How unimportant is this planet? It is hard to get an image of it isn't it because, if you think of it, the distances in space are so vast. For instance, this is a picture from the Hubble telescope, this is the magellanic cloud. Well, you know, distance in space is measured in light years; distance light travels in a year, which is far. Truthfully, you know, I mean that is further than Brighton, no really.

Now, that is 170,000 light years. Can you get your head round that? It is just, oh it's big. And where does the earth fit in all of that. The problem with getting any sense of how big the earth is or small, is that the distances are so immense that they blur our perception of relative size. So I came across this image, ((?)) on the Internet, I just quickly want to show them to you.

I think they are absolutely fantastic. I have had them re-rendered for your benefit. These are pictures of, I suddenly had the brilliant idea of taking the earth out of the sky and lining it up with some other planets in the solar system for purpose of comparison of size. So it is like a team photo, you know, of some of the planets of the solar system and beyond. It starts with this.

Now there are a couple of things … I think we are looking good, that is the first thing to say about this. But there are a couple of things I want to say about it. The first is, that I think we are less concerned than we were about being invaded by Martian hordes, aren't we. I mean, bring it on, I feel. Like, you and whose army, I think we are feeling.

The second thing is that Pluto is no longer a planet and frankly we can see why now can't we? What were we thinking? You know, it's a boulder frankly.

But pull back a bit though, and it is a bit less encouraging isn't it? Don't you think, a bit less encouraging and Pluto is a kind of cosmic embarrassment now so we don't even … But we know the sun is a big deal but how big exactly is the sun compared to the earth?

So this is, I checked this with some astrophysicists and they said, yes, this would be about right. Here we are with the sun in the picture. Did you know that? Well keep your eye on the sun because that is not the biggest thing on the block. This is the sun against some other objects, not in our solar system but that you can see in the night sky.

So Jupiter is one pixel now and the earth has gone. So we want to be friends with Arcturus but keep your eye on Arcturus for a minute because I think our best friend is Antares. I mean that is extraordinary isn't it.

So go back to that and we are infinitesimally, pitifully tiny in the great cosmic scheme.

Now, I just want to say a couple of things quickly, the first is, whatever you woke up worrying about this morning, really, get over it. Honestly, make the call and move on.

But the second thing is this, that this may be but we do have this extraordinary power and I can put it this way. We have a power which enables us to conceive of our own insignificance. No other species on earth is sitting round getting anxiety attacks over these images. You know, you don't see other species in little forest clearings saying, "I had no idea. I mean, trust me, I wasn't expecting this." They weren't and they didn't produce these images either. We have this extraordinary human power to conceive of objects and experience outside of our current experience and to express them in conceptual and symbolic forms in ways that other people can engage with and grasp.

We are therefore the species that did produce Hamlet and the work of Mozart and the Industrial Revolution and this extraordinary building with its amazing images and hip hop and jazz and quantum mechanics and the theory of relativity and air travel and the jet engine and all the things that characterise the extraordinary assent of human culture.

But we destroy it in the way we educate people. I just want to end this and open up for some conversation by giving an example of something. There was a great study done recently of divergent thinking, published a couple of years ago. Divergent thinking isn't the same thing as creativity. I define creativity as the process of having original ideas that have value.

Divergent thinking isn't a synonym but it is an essential capacity for creativity. It is the ability to see lots of possible answers to a question, lots of possible ways of interpreting a question, to think what Edward de Bono would probably call laterally, to think not just in linear or convergent ways; to see multiple answers not one.

So, I mean there are tests for this. One kind of cold example would be, people might be asked to say how many uses can you think of for a paperclip? One of those routine questions. Most people might come up with ten or fifteen; people who are good at this might come up with two hundred. They do this by saying, "Well, could the paperclip be 200 feet tall and be made out of foam rubber?" Like, does it have to be a paperclip as we know it, Jim?

There are tests for this and they gave them to 1,500 people in a book called *'Breakpoint and Beyond'*, and on the protocol of the test, if you scored above a certain level you would be considered to be a genius at divergent thinking.

So, my question to you is, what percentage of the people tested, of the 1,500, scored at genius level for divergent thinking. Now, you need to know one more thing about them. These were kindergarten children. So what do you think? What percentage were genius level?

80%? Okay, 98%. Now the thing about this was it was a longitudinal study. So they re-tested the same children five years later, aged 8 – 10, what do you think? 50%, they re-tested them again five years later aged 13 – 15. You can see a trend here can't you? They tested 200,000 adults, 25 years and older, just once as control, what do you think?

Now, I always say, if you are in business, these are the people you are hiring. This tells and interesting story because you could have imagined it going the other way, couldn't you? You start off not being very good but you get better as you get older. But this shows two things; one is that we all have this capacity and two, it mostly deteriorates.

A lot of things have happened to these kids as they've grown up, a lot but one of the most important things that has happened to them, I am convinced, is that by now they have become educated. They have spent ten years at school being told there is one answer, it's at the back and don't look, and don't copy because that is cheating. I mean outside schools that is called collaboration but inside schools …

This isn't because teachers want it this way, it is just because it happens that way. It is because it is in the gene pool of education and to transform it we have to think differently, let me just quickly say this, we have to think differently about human capacity. This is what my book *'The Element'* is about. We have to get over this old conception of academic, non-academic, abstract, theoretical, vocational and see it for what it is, a myth.

Second, we have to recognise that most great learning happens in groups, that collaboration is the stuff of growth. If we atomise people and separate them and judge them separately we form a kind of disjunction between them and their natural learning environment. And, thirdly, it is crucially about the culture of our institutions, the habits of institution and the habitats they occupy.

I came across, sorry if I can just put my hand on it, a great quote recently, which seemed to me to capture some of this, about this distinction between ourselves and other species. I rather like this as a view, it says that when we come to assess people we should be fairer with ourselves. It says 'after all human beings were born of risen apes not fallen angels. So what shall we wonder at? Our massacres, our missiles or our symphonies. The miracle of humankind is not how far we have sunk, but how magnificently we have risen. We will be known among the stars, not by our corpses but by our poems.'

I believe there is a profound truth in that. We have it within our grasp to form systems of education based on these different principles but it means a shift from the industrial metaphor of education to what I think of as an agricultural metaphor.

If you think of it, if you look at the organisational chart of most companies and organisations, it looks a bit like a wiring diagram, doesn't it? If you look at the structure, like boxes and things connected. But human organisations are not like mechanisms even though these charts suggest the metaphor that they are.

Human organisations are much more like organisms. That is to say, they depend upon feelings and relationships and motivation and value, self-value and a sense of identity and of community.

You know the way you work in an organisation is deeply affected by your feeling for it. Therefore, I think a much better metaphor is not industrialism but agriculture or an organic metaphor.

I am doing a whole project at the moment in the state of Oklahoma, where I am trying to develop these ideas across the whole state. But I mentioned Las Vegas at the beginning, I will just show you a last image of this now. Not far from Las Vegas is a place called Death Valley. Death Valley is the hottest place in America. Not much grows in Death Valley because it doesn't rain. In the winter of 2004, something remarkable happened. It rained, 7 inches, and in the spring of 2005 there was a phenomenon, the whole floor of Death Valley was coated with spring flowers. Photographers and botanists and scientists came from the whole of across of America to witness this thing that they might not see again.

What it demonstrated was that Death Valley wasn't dead. It was asleep. Right beneath the surface were these seeds of growth waiting for conditions and I believe it is exactly the same way with human beings. If we create the right conditions in our school, if we create the right incentives, if we value each learner for themselves and properly, growth will happen. And the growth always happens. Before we are done I want to show you a couple of very short videos that will demonstrate but we will go into our discussion with Matthew just now. But I think we need to shift from this industrial paradigm to an organic paradigm and I think it is perfectly doable.

We need to conceive of institutions individually, not system-wide, as ones which don't just value utility but respect and promote living vitality, the energy of the organisation and its potential to be transformative. That doesn't think in terms of linearity but thinks of creativity and multiple options and multiple possibilities for everybody in it. That is not about conformity but about diversity and that is critically about customisation.

This is Death Valley in the spring of 2005, I think all our schools could be like that. Somebody once said, "The problem with human beings is not that we aim too high and fail; it is that we aim too low and succeed." I think we owe it to William Shipley and Benjamin Franklin to aim high.

Benjamin Franklin once notably said, "There are three sorts of people in the world; those who are immovable, those who are movable and those who move." I encourage you at the RSA to move and get a move on.

Thank you.

Matthew Taylor: Well thank you for that. It was fantastic and I actually spent the weekend working on a speech around how we can't tackle the kind of problems that we face like climate change, globalisation, population ageing, unless we can kind of dethrone the idea of Western selfhood that has emerged over the last … so I should borrow some of your ideas for my speech and that is okay.

Sir Ken Robinson: That's okay. Borrow them, you say.

Matthew Taylor: I don't know if you are going to be doing this in the film that you want to show later, but what would be really interesting would be to hear from you an example of what works. So something which you've seen, you know, you've described a lot what doesn't work and what is wrong, give us something that will kind of awe-inspire us as to how it can change.

Sir Ken Robinson: Okay, can I show you a small film clip?

Matthew Taylor: Of course.

Sir Ken Robinson: This is of a school in Massachusetts, now it is maybe not what you are expecting but this is a school that six years ago was one of the lowest performing schools in the State. The State is one of the highest performing States in the country for regular types of work. They had a new principal come in and five years on there is a waiting list to get into the school. They have gone from the situation where no child from the school had ever gone to college, to one now where they all go without exception.

It's a partnership with Clark University in Massachusetts. I would like to show you that and before we are done there is a fantastic dance programme with young offenders that I would like to show you a few minutes of just before we finish.

Video Soundtrack: The States High School drop out rate 3.7% is the highest it has been in 14 years. In Boston the States largest schools system, it is predicted that 25% of the senior class will have dropped out by June. Amongst current juniors, the number is projected to rise to 31%. Yet in Worcester there is a school where the drop out rate hovers near zero and that is only one small piece of the University Park success story.

Senior Katie Brown has a demanding schedule of classes.

"I take Sociology, Honours Sociology, Honours Probability Statistics, Honours in Physiology."

Every day Antoine has a full load of homework.

"I do a lot of homework at night. I spend like three or four hours working on homework."

If you think excellent schools are only in the wealthy suburbs, think again. This school is in the middle of Worcester's poorest neighbourhood and yet it produces some of the highest-achieving students in the State. By any measure, the students at University Park High School should be the ones most likely to fail.

"About 75% of our kids don't speak English in their homes. We're about 72% fee reduced lunch, which is the Federal measure for poverty."

So how is it that for five years in a row not one student has failed the MCAS and more than 80% scored advanced or proficient?

"We are a literacy-rich school. They read, they write, they think."

And there are high standards for each and every child. When they arrive in seventh grade most are reading at a third or fourth grade level.

"And what we do in grade seven and eight is get them up to speed, you can kind of compare it to boot camp."

Then in ninth grade they begin a curriculum comparable to that of the finest prep school.

"I always said, if it is good enough for Andover, it is good enough for University Park."

Donna Rodriguez, now a consultant on school reform, founded University Park in 1997 based on a model of accelerated high schools around the country.

"And those schools have the mission of students not only graduating from high school but having an associates degree at the same time. So they graduate from high school with 60 college credits."

So what makes this school work? Exciting material that engages students. Individualised strategies for different learners and the unquestioned belief that every child can succeed.

"We don't have tracking because that to me is the signal that some of you are going to make it before the others."

Here everyone makes it. 100% of University Park students go on to college.

"They are at Brown, they are at Tufts, they are at Georgetown."

It is one thing to have high academic standards, it is another to support them. Teachers staff a homework centre before and after school and are encouraged to get to know each student well.

"All of my teachers, all of them, are committed to helping these kids succeed."

The culture of support includes students. They are expected to help each other until everyone understands the material.

"If you look at it, it is like the yeast going inside."

"You think the yeast is going inside?"

"Because then it is warm and this is cold."

Science teacher, Jodie Bird, says, "Demanding as it is, she couldn't ask for a better job."

"The kids are great and you can teach what you love and you can form relationships with students that engage them."

These eighth-graders are so engaged they complained when the class was over.

"They were begging me to come after school. Please, please, please can we reset up that experiment, we just want to get some more data."

"Pretty Ophelia."

"*(inaudible)* can we make an end of it?"

A founding partner of the school, neighbouring Clark University allows juniors and seniors to take classes. If they are accepted here, tuition is free.

Growing up Reed Powell figured his only hope for college would be basketball but after six years of hard work his grades are the ticket to his future.

"Now I'm applying to Princeton and Cornell, the Ivy League Schools, so like the upper colleges in America."

University Park was the only high school in Massachusetts to make *Newsweek's* list of the top 100 in America but that doesn't surprise these students, they know their school is special.

"It's the cool thing to be smart. It's the cool thing to take college courses and stuff."

"The school has a great community and people bonding together."

"The path of my life with the males in the family was either drugs or gaol, so then this changed it big time and now I'm applying to college."

University Park students are chosen in a yearly draw and most families feel like they have hit the lottery when their children get in and in many ways they have. School founder, Donna Rodriguez, now works for Jobs for the Future. That is an organisation helping to bring education to under-represented students and University Park serves as a national model for that organisation.

Matthew Taylor: You were very nice about the RSA and mentioned me a couple of times but I have a confession to make which is that I used to work deep within the bowels of the New Labour Project.

Sir Ken Robinson: I know you did.

Matthew Taylor: You didn't mention that.

Sir Ken Robinson: No.

Matthew Taylor: No. Can I ask you a kind of New Labourish question, which is, you see a school like that and it is absolutely fantastic because it's got inspirational leadership. Now, actually the reason why Governments, like this Government, develop a kind of whole standards agenda and measurement agenda and all of that; it is not really to do with the model of learning, very often. In fact they are not really interested in that. It is to do with the model of how do you manage schools?

And it drives from an understanding that lots and lots of schools, particularly schools serving very poor areas, are really not very good at all. And so the question for Government is, how can you make sure that those schools don't continue to fail those parents?

Last week there was a huge row because Ed Balls said he was going to close down schools that didn't have a plan to get over 30% because no parent should be forced to send their child to a school that was going to achieve less than 30%.

So my question for you is, how do you achieve the kind of progressive, expansive, creative education that you want broadly and not just rely upon kind of inspirational leaders like the one we've just heard about, without reverting to those kind of industrial systems of control and measurement?

Sir Ken Robinson: Well, I think the problem is exactly the one that you describe which is that Governments don't improve education because they don't understand it is based on a model of learning. For as long as Governments think that it is about managing the system more efficiently, rather than improving the quality of learning, we're in a mess. Nothing will improve it. The only thing that will improve it, is improving the experience of learners and that means improving the quality of teachers.

I think there is absolutely no other solution to it. There are management things you can do to make it better, more congenial. But you see I have a comparison here; if you think of another industry, if you think of catering as an example. There are two models of quality control, or quality assurance in the catering business.

One of them is standardising; and that is the model that informs the growth of the fast food industry. So if you have a favourite fast food outlet, you know whichever one you go to, wherever it happens to be, it will be exactly what you are expecting and exactly the same as all the other ones. It will have the same burger, the same buns, the same chicken wings; it is all guaranteed. It is all horrible but it is guaranteed and it is also contributing to the worst epidemic of diabetes and obesity in the history of the earth, but it's guaranteed.

The other model is like the Michelin Guide or the Zagat Guide, or Egon Ronay. Now what they do is establish criteria for excellence, very high standards, much higher than those of the fast food people. But they don't tell you how to do it. They don't tell you what to put on the menu. They don't tell you who to hire and they don't tell you what the place should look like. You figure it out.

And the way they work out if you are any good, they send people along who know all about it to see if you are doing it. If you are doing it you are in the guide and if you're not, you're not. And the result of that is that every one of these restaurants is great and they are all different. They are different because they use local produce, appeal to local markets, local circumstances and they are customised.

And I believe, honestly Matthew, this is the only answer for the future. We have to recognise that the heart of educational improvement is improving the experience of individual learners and treating each school individually and not as a mass.

You know, there isn't a kid in the country who will get out of bed wondering what they can do to improve the nation's reading standards. You know, they will get out of bed to improve their reading.

It is a very personal business and the only thing that changes the needle, that moves the needle, and that is what has been found through McKinsey and … you look at Singapore, you look at what is happening in Finland. You look at what is happening in this particular park and I'm not, by the way, I hope it is clear from my saying its about customising, I'm not saying that University Park is the model we go for.

This was a school adapting to its circumstances and meeting the challenge it was facing in its context. But it achieved these remarkable results by understanding what the local community needed, what was bringing these kids down. That every one of them was capable of succeeding and having teachers who were motivated and inspiring and engaging.

I think that if you try to develop a model of educational improvement that leaves out the very means of improvement, then politicians will continue to wonder around looking confused because it isn't about that. It is about improving every child's experience.

The thing about that is, it sounds like, oh my God, but kids are turning up for school every day. The good news is that you can get on with it tomorrow. But it does mean, we set out to you in the Gulbenkian Report in 1990 when I sat in this room, that you know, 20,000 head teachers, properly motivated, properly trained, properly resourced, would transform education in five years, and they still would, truthfully.

It is why things like the National College for School Leadership are very important. It is why training teachers is very important. I was involved in Warwick University for twelve years training teachers and it was depressing. You know, we kept getting this stuff through from the National Curriculum, from the training authorities and it was all trying to make education teacher-proof. You know it is like trying to make food nutrition free. Like, why do you do that?

Sorry, I am sympathising, I am not getting at you Matthew, but … but don't do that!

Matthew Taylor: I've given it up.

Sir Ken Robinson: Good, you are doing great stuff here by the way.

Matthew Taylor: Well if we are really sharp we can take two rounds of questions.

John Keiran: That was terrific and it is a related point to the question Matthew asked about, you know, Governments. You always hear the word education and the word Government follows soon afterwards. I have a, I mean I know very little to be honest about this, but I have a kind of a suspicion that actually we are looking slightly in the wrong place and maybe parents … I just wondered whether actually parents ironically are potentially the block because no parent wants their child to be experimented on.

However, experimentation is the source of progress as we know from medicine and everything else. I just wonder how, whether you recognise any of that, whether there is any truth and whether there is a way of sort of, perhaps the message needs to get through to the voting populous rather than the Government.

Libby Davey: I am interested in the Reggio Project near Bologna, I wonder if you've heard of that and I wonder if you could talk to that as a model. I believe it to be a profound model for education.

Matthew Taylor: So that is about the Reggio model in Bologna and I will take this gentleman here.

Peter Cook: We met in Warwick. California has been kind to you. My question is about accountancy.

Sir Ken Robinson: What does that mean? What does that mean Peter?

Peter Cook: Well you said that its better over there. My question is about accountancy, it relates to parents. I think we are entering an age where the rise of the number supersedes many decisions. We can measure everything, not everything we can measure matters. So, given that we can have league tables for everything and politicians look at where people are voting to make their decisions about education, how can we ward off increasing numeracy in education? I don't mean for the children, I mean for the people who make decisions based on numbers.

Sir Ken Robinson: You see I'm not against matrix, I am not against standardised testing. What I am against is it becoming the point of the exercise. You know, if I go for a medical examination I want some standardised tests, I really do. I want to know what my cholesterol level is against everybody else's. I don't want it on my doctor's personal scale. What I call level orange. I don't want to know that. Like against everybody else's.

You need matrix and you need to measure what is in the system so you can test the health of it. But what you also have to accept is that some things can't be measured like that. Some of the most important things can't be measured like that. For that you need judgement not just data.

At the heart of every scientific process it is not the data, it is the judgement you make about it. My problem is that when Government policies are transacted into schools kind of remotely through statistical exercises, the people who are doing the work become demoralised because they feel the people at the centre don't understand them. And they don't, very often.

That is the problem. I have always felt the future of education is to hire great teachers. Get the best people that you can to go into it. That doesn't mean the people with the best degrees necessarily. To be a teacher you need several things. You need to know your stuff. You can't get high standards among kids being taught by teachers having low standards themselves. You need to know your stuff.

You need to have pedagogical skill, you need to be good at this. And thirdly, you need to love doing it. If you get that, and I think there are enough people out there to make it happen, then the thing becomes transformed.

But it is not going to happen overnight. It is going to be a generational shift but we should get on with it and I think your point about parents is absolutely right.

You see parents are, in a way, part of the problem. But the problem is that they haven't stood back to look at the situation. They are kind of driving their kids through these systems because they think it's the best thing to do. But in my experience, and I speak a lot to big organisations, lots to companies and to parents, I always get people coming up at the end and saying, "This is my child you are talking about." Or "that was me."

I'm a parent and all the parents I know are interested in their child. And they look into their kids eyes and they know who they are and it worries them increasingly that that is not being cultivated by the school.

Now I'm saying I think this changing paradigm is really fundamental because we've had years and years and years of trying to improve the existing one and I think, you know, if you keep doing the same thing and getting the same result, do something else. In the end education is about individual people learning in groups and in communities and the sooner we get that and that at the heart of this is a diversity of talent and motivation, it will transform itself. But it will do it.

I have often said, you know, that this agricultural model, that gardeners depend upon, or farmers depend upon plants growing successfully. But the irony in the middle of it is that they can't make them do it. You know, farmers don't stick the petals on, attach the roots and paint the damn thing. The plant grows itself.

The job of a farmer is to provide optimum conditions for growth and the same thing is true of teaching. If you provide the conditions, people are transformed by them but if you adopt some factory farming model and stick people in cages and feed them nitrates, don't be surprised if they go crazy. That is I think what is happening. I really profoundly believe it.

We have to start where the problem is.

Matthew Taylor: Tell us about Bologna.

Sir Ken Robinson: Well you might want to say, Reggio Emilio is a school in Bologna. It is an elementary school, kindergarten, and it is based on the premise that it takes a village to raise a child so they've got the whole village involved. But it is based on the sort of principles that Montessori would approve of, I think and Freeble and the other great reformers. It is about learning through play, through personal growth, through community projects and so on.

And of course, some of the most successful projects like Reggio, that's been going for years, some of the work you see going on in Scandinavia, I mean I have this big debate about it. Kids that are left to play for a while and learn imaginatively end up much more motivated to carry on learning than kids that have had it taken away from them.

I think it is really worth, it pays you to look at models like Reggio, not because you can replicate them, and that is the whole point really. You don't go along to an Egon Ronay restaurant and say, "Well we'll do one of those." What you take away from it are the principles of individualised learning, of group activity, of motivated teachers, of high standards, of respecting diversity.

Some of the most amazing people I know failed at school. I did a series of workshops a while ago with John Cleese of Monty Python and John said he went from kindergarten to Cambridge and nobody ever thought he had a sense of humour. He does, doesn't he?

Paul McCartney is in the new book we're doing. He went through the whole of his time at school in Liverpool and nobody thought he had any musical talent. Well he does, doesn't he?

Apparently their music teacher had George Harrison and Paul McCartney in the same class and didn't spot any talent. Elvis Presley wasn't allowed in the Glee Club at his school because they said he'd ruin their sound. Elvis, I mean we know what great heights the Glee Club went on to one they'd chucked him out but …

But I am saying individual talent is wonderfully diverse and if you reach people it is extraordinary what comes.

Before we are done I really would like to show you a few minutes of this. I only saw it today but I really think you should see it. It is a fantastic video of a company called Dance United who are working … do any of you know who this company is? Given that dance is down the bottom end of the food chain, these are people working with young offenders who I think … Matthew was telling me earlier about the new approach to funding social welfare, which I think is brilliant as you describe it.

This is part of a, I think an enlightened view of sentencing where kids are in fact sentenced to dance for 30 hours and I think it is a fantastic thing. There are these young offenders who are like hard-bitten, hard-core kids, who do this intensive twelve-week programme of contemporary dance and you will be amazed at the change in them. The scepticism of their parents, of their friends, of themselves, but they come out different people. For those of you who know the company, it is true isn't it, if you know the company.

It is a fantastic thing and I really would like you to see it because it illustrates moving right back to the beginning, what happens if you get through to people, make demands of them, give them an opportunity to demonstrate what they can do and connect to their talent. Then you get transformation, that's the paradigm.

Matthew Taylor: Now we are going to do three things very quickly before we invite you to join us for a drink. Firstly, I am going to ask Andy Powell from Edge, Edge have supported this whole series of lecture. I think some of you have been to many of the lectures and we are finishing on a high point with Ken's lecture. Andy is going to say a few words about Edge and their work.

Andy Powell: Do you know it is humbling? I found that about you humbling, connecting people with their true talent, helping people discover what they love, what they are good at, who they want to be, what their element is, all of this stuff that there isn't just an academic route that people have different interests and talents are absolutely things that at Edge we are committed to. I just wish I could put it as well as you.

Changing the learning experience and therefore having to change the teaching experience too is also very much what we are about. Einstein's definition of insanity was doing the same thing over and over again and expecting a different result. It seems to me we have been trying in various sorts of ways and policy to say this sort of stuff and do the same thing over and over again and of course we are not getting a different result.

Like you we certainly believe you have to shift a paradigm and if you are going to shift a paradigm, paradigms don't shift through intellectual argument. They shift through communication and we are in the communication revolution.

It has been a great privilege for Edge to work with the RSA and support these five lectures and a particular privilege to be at this last one where we have, in my view, the greatest communicator in this area and that is what it will need to change things. So, thank you for that.

It has also Matthew and Alex Lucas and all of the lecture team, been a great pleasure working with you over these five things, the RSA is a vital organisation. We love working in partnership with you and we intend to continue and to develop the moves that Sir Ken talked about or indeed the movement. So, thank you.

Matthew Taylor: Finally I just wanted to say a couple of things before I ask you to thank Ken one last time, about the work that the RSA is doing. I talked about 'Opening Minds' earlier on, which is the curriculum based upon the work that you were talking about on capabilities-based curriculum.

We are also working on a whole set of schools that are

'Opening Minds' on our new areas of innovation, we are looking at teaching and learning. We are looking at how every school can be an innovative school. So how every school has a story about its own innovation and we are looking at how you can take schools without boundaries. So how we can talk about the engagement of parents and communities within schools and we are working with schools to develop their own innovations in those areas.

We are working with Manchester on the idea of a curriculum much more embedded in place. So how could you get stakeholders in Manchester to be engaged? So that there is health being taught in the school Local Health Authorities involved in helping design. To have a sense of ownership so the curriculum is not a secret thing hidden away in the school but it is a thing which is owned by everybody in the city.

And then finally in a few months time we are hoping to launch what we are calling a Progressive Education Charter because one of the things we think Ken, is when you talk to parents they have two films playing in their head. One of the films is of education as you've described it, which they would really like their children to have, to really enjoy their education, to come out of school buzzing with enthusiasm. But there is another film, which is basically, I had a horrible time so my children should too.

When things go wrong in schools they are as apt to listen to the kind of Chris Woodhead analysis of what is going wrong as they are to listen to the Ken Robinson analysis. So what we are trying to do is to produce a set of very simple principles and seek to mobilise what we thing is a kind of silent majority of parents who do want their children to enjoy learning.

So it is very simple and I can just tell you two of the principles. One is, the first one is, that the most important objective of education is that children should love learning and to come out of school wanting to carry on learning throughout life. Number one.

Another one is that teaching should be a creative profession in which we give teachers the autonomy and the space to develop their own professionalism. So these are just two of the principles.

We are working with a whole set of institutions, including Edge, to develop this charter, to publish it and to really try to mobilise a huge constituency of parents, of teachers and of pupils, working in networks throughout the country, banging on the doors of every school and saying, "Look what we could do. Look what is possible."

So that is the RSA's work going forward. A lot of it is really coming from the work you've done yourself here. It has been an enormous privilege to have you here this evening. If you want to watch Ken's lecture again, it will soon be available on our website but it won't be as good as seeing the man in the flesh, so can I ask you to thank Ken Robinson.