

# *Technology: the Missing Link between Education and Development*

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*Public Lecture*

*By  
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## *Introduction*

It is a great pleasure to be back at Massey University. I was first here some twenty years ago when, as president of the International Council for Distance Education, I was trying to visit the key centres of my far-flung global parish of individuals and institutions engaged in distance education. Those were still pioneering days. Because there were few centres in each country offering distance education we networked enthusiastically with each other at the global level in order to share experiences and develop the professionalism of the field.

At about that time networking also took off at the national level and I remember being in this country for the founding meeting of DEANZ, the Distance Education Association of New Zealand. Massey University, through Don Bewley, was instrumental in creating DEANZ.

DEANZ has flourished alongside the steady expansion of distance learning in New Zealand. It was a great pleasure to come to New Zealand again last week, wearing my new hat as president of the Commonwealth of Learning, to attend in Dunedin the 3rd Pan-Commonwealth Forum on Open and Distance Learning hosted by DEANZ. Some 400 people from 40 Commonwealth countries attended this very successful meeting and I thank New Zealand for its hospitality.

It is a pleasure to take advantage of my visit to come again to Palmerston North and renew my

acquaintance with Massey University, which has developed greatly since I was last here. I come to you from Wellington, where I have had some very useful meetings with the ministers and officials in your government who have the responsibility for New Zealand's overseas development work. It is in that context that New Zealand contributes to the core budget of the Commonwealth of Learning and also, most importantly to the governance and guidance of COL.

We are greatly privileged to have Shona Butterfield as New Zealand's member of our Board of Governors and she is playing an important role in modernising our governance arrangements so that they are inspired by best practice in New Zealand. Your country is governed in an impressively open and transparent manner and the world, particularly the sometimes secretive world of international intergovernmental organisations, has much to learn from you.

I appreciate being asked to give this public lecture. I shall take as my topic the issues that were on my mind in Wellington in the last few days and at the Pan-Commonwealth Forum in Dunedin last week, namely the role of education in development - and more particularly, how to make that role effective. My title is Technology: the Missing Link between Education and Development.

I tend to read books backwards, so I shall start at the end with the word development. Development is a very common word - my word processor tells me I have already used it seven times in the four minutes that I have been speaking to you. What do I mean by it?

## Poverty alleviation

The war on poverty is at the centre of the worldwide enterprise that we simply call 'development'. Our aims for development are summarised in the Millennium Development Goals that accompanied the Millennium Declaration made in 2000 by the largest assembly of heads of state and government ever held at the UN. First among those goals is a call to reduce the proportion of people living on less than \$1 a day to half the 1990 level by 2015, that is to say from 28.3% of all people in low and middle-income economies to 14.2%.

That is the goal, and we are making progress towards it. If projected growth remains on track, global poverty rates will fall to 13% - which is less than half the 1990 level - and 360 million more people will avoid extreme poverty. Poverty would not be eradicated, but we would be much closer to the day when we can say that that all the world's people have at least the bare minimum to eat and clothe themselves. However, it has to be said that eradicating hunger itself has been slow, with the situation worsening in some regions.

Is the term poverty alleviation is strong enough? Ought we not to talk about the eradication of poverty? Indeed, my former colleague Pierre Sané, UNESCO's Assistant Director-General for Social and Human Sciences, likes to talk about the abolition of poverty and makes an explicit analogy with the abolition of slavery. Calling for the abolition of something does not, of course, make it disappear. Some claim, for example, that there are more people living in slavery today than at any time in human history.

Nevertheless, getting international agreement on the need for abolition of an evil creates a stronger moral pressure to match up to the ideal. You no longer meet people who will argue in public that slavery is a good thing. If the pioneers who led the campaign to abolish slavery in the 18th and 19th centuries had talked about the alleviation of slavery, rather than the abolition of slavery, I doubt that they would have succeeded in launching a campaign that became a turning point in our understanding of human rights.

Ought we not therefore, to aim for the eradication or abolition of poverty, not merely its alleviation? Is this possible? You can answer the question in two extreme ways, each of which presents a problem.

The first extreme answer is to say that the abolition of poverty is possible, because if the world's wealth were to be shared evenly then poverty would be eliminated. The problem with that answer, quite apart from the fact that people are unlikely to share their wealth evenly, is the built-in assumption that wealth is a zero-sum game. I mean the assumption that there is just so much wealth to go around and the challenge is to share it. But that is not true. Wealth is something that people create; they don't have to take it from someone else.

Singapore is perhaps the most startling example of wealth creation in our lifetimes. Fifty years ago Singapore was a poor equatorial swamp. Today it is one of the world's richest countries.

The second answer is to say that the abolition of poverty is not possible. Jesus Christ said, 'the poor you will always have with you' and other prophets and thinkers have said the same. Poverty is part and parcel of human nature. But this need only refer to relative poverty. No matter how equal the opportunities before them, people will tend to become unequal. In all societies some people will be richer than others. This is not, however, what the first Millennium Goal means by poverty. It refers to the abject poverty that sees people dying from starvation in a world of abundance. Abolishing that kind of poverty should be a realistic goal.

In May I went with my wife to visit the places where her great-grandfather had lived and worked in Sweden before his widow and children left for the United States in late 19th century. He had been born in an impoverished area of western Sweden and several members of the previous generation of his family had died in the poor house. We went to the region and found a palpably prosperous town. Some residents were no doubt richer than others but there was no poor house and no one dying of poverty.

What happened in Sweden in the last hundred years and in Singapore in the last fifty years to create such a massive change?

## Development - what is it?

The answer is development. But what is development? We owe to Nobel prizewinner Amartya Sen a way of thinking about development that is simple, powerful and inspiring. For Professor Sen development is about freedom. The measure of development is the degree to which the freedom of people is enhanced. That means many kinds of freedom. To begin with it means freedom from hunger and freedom from abject poverty. It also means freedom of expression and religion. It means political freedom. On this

definition of freedom the achievement of the Millennium Development Goals becomes a by-product of something much more uplifting, the release and flowering of the human spirit.

And there is more. For Amartya Sen freedom is not only the measure of development but also the means of development. That is because the surest route to development is the free agency of people. It is people that develop communities, societies and nations. Free people, acting as free agents, do it better than people who are not free.

So development and freedom feed on each other. Development enhances the freedom of people and free people enhance development. It is a virtuous circle.

## Development - how to achieve it?

The question then becomes: 'how do you start the process?' How do you get this virtuous wheel to start turning? You will not be surprised if I claim that education is the most effective mechanism for development and I shall come to that in a minute. However, development, just like the life of humankind in society, is a complex process that depends on many factors.

One of the lessons that I have learned in a long career in education, and particularly through my work in international agencies like UNESCO and the Commonwealth of Learning, is to avoid one-dimensional solutions. Unfortunately, the story of international approaches to development over the last thirty years is the story of the search for one-dimensional formulas for development, the quest for short cuts that would deliver prosperous societies with minimum effort.

Because many of the people who work in international development are economists many of those formulas were economic, such as industrial expansion, import substitution, infrastructure development and, of course, the late and unlamented nostrum of structural adjustment. Some of these formulas worked, some of the time. But the lesson we learned was that there is no short cut to development, no magic bullet that can be fired at the problem of poverty. Developing countries need to get many things right at the same time.

Furthermore, the basis of national economies is moving, at different paces in different places, from land to capital and then from capital to knowledge. The consequence of this process is that increasing the skills and knowledge of human beings, in other words education and training, is becoming an increasingly significant motor of development.

But before I turn to that in more detail, let me emphasise that I am not advocating education as a one-dimensional solution to the challenge of development. You only have to look around the world to see that education by itself is not enough. You can all think of countries, or states within countries, that have - or once had - very good and comprehensive education systems that do not - or did not - translate into obvious prosperity. The reasons for this are - and were - diverse. Their economies may be organised in a perverse fashion. Neighbouring countries may be applying sanctions. The terms of trade may be stacked against the country's products.

Development requires that these weaknesses need to be addressed as far as possible. Some of the solutions are straightforward and simply need to be applied; others create more controversy.

At the moment the most controversial issue is the role of globalisation in poverty reduction and development. Part of the controversy carries over from the wider controversy about whether poverty is actually declining, because you can reach different conclusions depending on whether you look at the national accounts or conduct household surveys. Another part of the controversy links directly to the debate about free trade.

I shall not open up these controversies here. My own reading of the evidence is that those countries that have opened themselves up to the world, in trade and other ways, have developed and reduced poverty more quickly than those that have not. South-East Asia seems to me a good example of a region that has welcomed globalisation and benefited from it.

## Education - the key to development

Sound economic policies, political stability and social cohesion are all important for development and the abolition of poverty. However, after all the effort expended on searching for short cuts to development one conclusion stands out. No country is likely to get far beyond the threshold of development unless it ensures that most of its people receive a good basic education.

For some governments this is an inconvenient conclusion because providing basic education for all is a long hard slog requiring a sustained national commitment. It cannot be done with a flick of the finance minister's pen. It does not have the glamour of creating a national airline. It lacks the media impact of nuclear weapons. But it is fundamental.

Amartya Sen's definition of development as the enhancement of freedoms also leads us directly to the central role of education. Education is a human right and also provides the high road to the enjoyment of other rights and freedoms. Education is the route to the full development of people as human beings with social, spiritual, intellectual and cultural aspirations as well as with economic interests. National economies are there to serve the people, not the other way around.

## Quality Education - what does it mean?

I just used the expression 'a good basic education'. What do we mean by that? The World Bank's research has found that reaching the threshold for sustained development requires the majority of the population to complete a primary education of good quality - although the Bank expresses that simple conclusion, as you might expect, in more complicated language than I have used.

So what is a quality education, whether at primary or any other level? The standard general definition of quality is fitness for purpose at minimum cost to society. What is the purpose of education? UNESCO's Delors report defined it as four areas of learning: learning to know; learning to be; learning to do and learning to live together. I like to distil that down even further into two broad areas of learning. The Euro

notes now in use in Europe provide a nice symbol for them.

One side of each note depicts a door or a window. Think of that as symbolising the process by which individuals look out on the world and get to know it: learning to know and learning to be. It is the creation of competent individuals.

The other side of each note shows a bridge. That symbolises the links between people: learning to live together and learning to do. It is the education of citizens to play their parts in communities. That is very simple symbol but I believe it expresses our essential purpose as educators.

That purpose must be to equip people for the world in which they live and will live. In that context I commend to you a recent book by Andy Hargreaves entitled *Teaching in the Knowledge Society: Education in the Age of Insecurity*. His basic point is that the knowledge economies to which developed countries aspire depend on creativity and ingenuity. Yet he finds that in many rich countries the present trend is towards rigorously prescribed standardised curricula that give neither the children nor the teachers any room for ingenuity and creativity. Such curricula will not prepare people for knowledge economies and learning societies.

Part of the motivation of the drive for standardisation in the west is envy of the performance of the education systems in Asia some 15 years ago. Several Asian countries significantly outperformed those in the west and they did have standardised curricula and, let's be honest, a strong emphasis on rote learning. The irony, of course, is that those same Asian countries are today slimming and loosening up their curricula to give more room for creativity and ingenuity. According to Hargreaves' thesis, this will mean that Asian countries are better equipped for the knowledge society than those in the west.

That is enough about the purposes of education. The question is, how do we achieve those purposes?

Education is not simply about teaching a curriculum and testing whether the kids have learned it. The physical and psychological state of the pupils, the competence of the teachers and the environment of the school are all crucial factors. We want child-friendly schools that seek out children in order to give them the education that is their right. We want schools that are centred on the children and include all of them in their activities. We want schools that link to the families and communities around them.

## Equity of Access

Talking of child-seeking schools and of inclusive schools brings me to the issue of equity of access. Education is a human right so there should be no question of restricting access. However, real life is not that simple. Throughout the history of education until the present day an insidious link has existed between quality and exclusivity. People have assumed that you cannot have quality education unless you exclude many people from it. This may mean excluding them from school or, if they do come to school, streaming them off into curricula and lessons that are acknowledged to be of lower quality. Down at the Pan-Commonwealth Forum in Dunedin we heard an exceptionally interesting address by Professor Russell Bishop of the University of Waikato, who opened up this issue as it affects Maori people in New

Zealand.

In recent years two very important developments in education have demonstrated that quality and exclusivity need not be linked. The first development is the results of the Programme for International Student Assessment (PISA). The second is the use of technology in education, especially in distance education. I shall comment briefly on each.

The PISA programme was developed by the OECD for its member states and is now being extended, in collaboration with UNESCO, to an increasing number of other countries. It measures the reading, scientific and mathematical literacy of 15-year old children. To my mind the most important result of PISA comes when you compare the average level of attainment by country and the equity of that attainment, that is to say the gap between the top performers and the bottom performers.

This chart shows the results for reading literacy. The vertical axis shows the average performance by country and the horizontal axis shows the degree of equity. The countries at the right-hand side of the chart have the narrowest gaps between the top performers and the bottom performers. What this shows is that the countries with the highest average performance, such as Canada and Finland, are also countries with high equity, that is to say a narrow gap between top and bottom. Looking at it another way, the countries with the highest degree of equity, such as Korea and Japan, also show pretty high performance.

On the other side of the chart we see, very close together, France and the United States, which have average performance but below average equity. New Zealand has high average performance but below average equity, which is what I would have expected after hearing Professor Bishop the other day.

My comment on technology will be even briefer. You can express the challenge facing educators as the management of what I call the iron triangle of education, defined by the vectors of access, quality and cost. With conventional methods of education it is difficult to reshape this triangle, because increasing access tends to raise costs or reduce quality.

Some of the rich countries surveyed by the PISA have been able to achieve equity and quality together by a combination of wealth and good policies. Sadly, developing countries simply do not have the resources to achieve quality and equity in traditional ways.

However, the good news is that intelligent use of technology does allow us to break open this straitjacket and to increase access, raise quality and decrease costs, all at the same time. This is why I call technology, by which I mean approaches and systems, as well as machines with flashing lights, the missing link between education and development.

The best examples of that are the open universities, which have flourished particularly well in Asia. I have written a book about them but I shall not try to summarise it here. If you wish we can return to that in the question period. The key point is that, encouraged by the success of the open universities in achieving quality at scale with low cost, technology is now being applied to the creation of open schools and to community education. India's open school has 1.4 million pupils and I hope that similar



technologies will bring relevant learning to the millions of rural farmers in the developing world who hold the key to the Millennium Goals of poverty and hunger.

## The role of the Commonwealth of Learning

That brings me to the final section of these remarks. What is the Commonwealth of Learning doing to progress the development agenda?

Our task is to provide that missing link, that is to say to help countries use technology, particularly the approach that we call open and distance learning, to provide education and training on the scale, with the quality and at the cost that will enable all people to learn. Achieving each of the Millennium Development Goals, not just those about education but also those dealing with food, health and water, will require millions of ordinary people all over the world to learn on a massive scale. Traditional approaches to education and training cannot cope with the challenge so we must bring new approaches to the problem.

COL is funded by the countries of the Commonwealth and I acknowledge with gratitude New Zealand's contribute and ask you to support its continuation. I am pleased to say that the developing countries of the Commonwealth also provide funds to COL, which is proof, I believe, that they find our work useful. India and Nigeria have provided significant funds since the beginning. However, if you take the contributions of all the Pacific States, including Australia and New Zealand, those from the island countries of the Pacific amount to 14% of the total, which is pretty impressive considering the size of their economies.

Because we are funded by Commonwealth countries it is in those countries that we carry out programmes. However, since we are the only international, intergovernmental agency of any kind with this tight focus on technology and education, we have a worldwide mission to make information about open and distance learning and ICTs freely available. I am proud of the way that we carry out that mission through our website and our knowledge finder.

As concerns our programmes, we focus on the developing Commonwealth and we provide help in three areas: policy, systems and applications. In earlier years COL operated largely through projects but the world has matured beyond that. Sustainability is a crucial element of development. There is no point in helping a country develop a wonderful system or institution if it falls apart as soon as the external funding dries up. That is why we help countries develop policies for the use of technology in education. They provide a firmer basis for action that more readily survives changes of government or of ministers.

We also help countries develop systems. In the early days there was a focus on open universities. Today many of them are operating successfully and sustainably. Indeed, India's Indira Gandhi National Open University is now of major assistance to COL in training people to run open universities elsewhere and in developing community education for farmers in India itself. We now focus particularly on the use of open and distance learning for teacher training and at the school and community level.

Finally, at a smaller scale, we help with applications of technology. One very successful programme, which benefits many of the Pacific islands, is our Media Empowerment programme. This aims to train



people in the community to use media such as video and radio at quite a sophisticated level. The use of these media then becomes indigenous to the community and is used for getting across messages about issues of development, from improving livelihoods to the avoidance of HIV/AIDS.

Let me add that COL is a very small team thirty-four staff in total, including just ten education specialists recruited from around the Commonwealth. They are a remarkable group of people and I am immensely proud of them. They have a terrific reputation with countries all over the world, particularly here in the Pacific, because they deliver sustainable developments.

## Conclusion

I shall end there and take questions if we have time. It has been a special pleasure to come to Massey University again because you have been such an important example of what we now call, in the jargon, a dual-mode institution, that is to say you teach both on campuses and at a distance. I have referred to the open universities because they show the power of technology in a spectacular fashion. Today, however, most countries are engaged in the more difficult process of converting institutions from single mode to dual mode. Massey is a great example of success in that venture and I offer you my best wishes for the continuance of that achievement.