

CREATIVITY-HEARTBEAT OF AN INNOVATIVE ECONOMY

Address by Professor Emeritus Tan Sri Dato' Dr Lim Kok Wing at District Education Officers' National Management Conference 2009 on 14 July 2009

I thank you for giving me this opportunity to share with you some of my thoughts about education for the future in a fast changing world.

The word "heartbeat" is used because if the heart stops beating, the system will collapse, and that underscores the pivotal importance of creativity in the development of a nation.

Education, being the most critical foundation in nation-building and economic development, the role played by leaders and managers of education can never be over-emphasized.

Indeed it has been said that next to parenting a child, educating our young must be the most important job in the world.

And that translates to mean that you are among the most important people in the country, because of your role in directing and implementing education policies in the country.

AN UNEQUALLY DIVIDED WORLD

Let me begin by sounding a wake-up call and by sharing with you some facts about the state of the world that relates to education and innovation today:

- A billion people entered the 21st century unable to read a book or write their names.
- The number of people living on less than US\$2 a day has increased by almost 50 percent since 1980, to almost 3 billion – nearly half the world's population.
- The poorest 50 countries make up 10 percent of the world's population, but account for only 0.4 percent of the world's trade.
- Fifty-one of the 100 largest economies in the world are corporations not countries. The top 500 multinational corporations account for nearly 70 percent of the worldwide trade.

- The Gross Domestic Product of the 41 Heavily Indebted Poor Countries with a combined population of 567 million people is less than the wealth of the world's 7 richest people combined.
- The world's low income countries which account for 2.4 billion people account for just 2.4% of world exports.

THE INNOVATION GAP THAT DIVIDES

It is the innovation gap that divides the world.

It's a divide between countries with the capacity to innovate and those simply without.

Advanced nations are pulling away to higher levels while the developing world continues to struggle just to keep pace.

The reality is that whilst there are huge investments in education in Asia, the emphasis is more often than not, about how long a student stays in school, rather than how much he has learnt.

And this, I believe is at the core of why despite admirable efforts being made in education opportunities, the quality of the talent is still that of a follower, not an innovator.

MANAGING CHANGE

To say that the future will always be about change is to state the obvious.

The size of your notebook used to be the size of this hall. Soon, it will be so tiny you can fold it into your wallet, and chances are it will be a hundred times faster.

Soon the tiny mobile phone will replace the computer. It will be all you need to do your work no matter where you find yourself on planet earth.

Soon those who do not like crowded places may travel to the moon for a really quiet, out-of-this-world holiday.

The worldwide web has already created a virtual reality that has made time, space and distance totally irrelevant.

Soon the internet will be home to a whole new virtual business world, one that needs no office space and recognizes absolutely no boundaries.

THE FUTURE WILL ALWAYS BE ABOUT ACHIEVING THE IMPOSSIBLE

It will always be defined and designed by those with creative leadership, by those who create their own games and write their own rules.

All recent phenomenal achievements have been accomplished by very young people who are fearless in their thinking. Here are some examples.

You are all familiar with Facebook. Every month more than 700,000,000 photos are uploaded into Facebook, which receives 4,000,000,000 hits every month. Facebook was launched by a 20 year-old student from his dormitory in 2004.

Even more amazing is Google. As of 2008, it has an index of 1,000,000,000,000 websites. Google was created in a garage by two 25 year old students, whose purpose was just to organise the world's information and make it accessible to anyone who cares to use it!

Yahoo receives an astounding 1,000,000,000,000 hits a month by people across the world searching for something on the web.

And now we have Twitter, which has completely removed the ability of authorities to block news and to black out views.

All of these phenomenal footprints have one thing in common, they have been created by very young people when they were barely out of school, with little more than a few friends and their computers and the ability to think out of the box.

The internet has changed forever the way we learn, and the way we acquire knowledge and information.

Are we doing enough to keep pace with the change that is happening at an ever-faster pace?

A CHANGED GLOBAL COMPETITION

The rise of innovation to the top of the agenda of many countries today has resulted in a profound shift in the nature of global competition.

Economic advantage no longer depends on natural resources, raw materials, trade of goods and services, giant factories, or even growing consumer markets.

Instead, creativity is now driving the new economy and regenerating the old economy.

At the cutting edge of this shift is the creative sector of the economy – science and technology, software engineering and web-publishing, digital media and design innovation, culture and entertainment, and the knowledge-based professions.

Because these industries rely primarily on talent, countries around the world have stepped up their efforts to attract the brightest scientists and most innovative thinkers.

Since the best brains would go to where they could do their best work, it is natural for the advanced nations with their better facilities and higher incomes to attract the best talents.

Many of the best brains from the poorest countries who are sent to the advanced countries to further their education do not return home, and are lost to the rich countries.

Africa reportedly has been losing 20,000 professionals annually to the developed countries. It is said that there are more African scientists, engineers and designers in the United States than in the entire African continent.

Malaysia too is a victim of the migration of talents off-shore.

About 30,000 Malaysians with tertiary education are currently working in Europe.

Tens of thousands of other Malaysians are contributing their skills and knowledge in countries such as the United States, United Kingdom, Canada, Australia and Singapore.

ENCOURAGING NEW IDEAS

Countries with the right conditions stand a better chance of moving ahead through innovation than those countries that still hold on to traditional and obsolete methods of governance.

The 'right conditions' is the key here. Innovation can only happen in places where there is encouragement for new ideas.

Without the right conditions the most talented and most creative brains will migrate to places where the environment is more supportive of their work.

Malaysia has some distance to go in creating the culture and platform to drive innovation.

Let us look at the position of some of the major drivers of innovation in the country.

- Malaysia is placed at 31st position in the Economist Intelligence Unit survey for 2004-2008 in innovation performance with 4.237 patents per million population. Japan, ranked at the top of the table, had 1,274.533 patents per million population.

The survey showed Malaysia moved up three rankings from 34th in the 2002-06 innovation index to 31st position in the list in 2004-08 but we are forecast to fall further behind to 35th spot in the 2009-2013 period.

For comparison, Singapore, Taiwan, Hong Kong and South Korea were all ranked much higher than Malaysia in the Economist survey.

- Malaysia's gross expenditure on R&D as a proportion of GDP is less than 1.0 percent.

Singapore spent S\$5 billion on R&D in 2006 or 2.39 percent of its GDP, and it is targeting 3.0 percent of its GDP on R&D by 2010.

Finland, the land of Nokia, invests about 3.4 percent of its GDP in R&D, one of the highest percentages in the world.

- Malaysia has a ratio of 17 researchers, scientists and engineers to every 100,000 people.

Malaysia will need to achieve a ratio of at least 60 researchers, scientists and engineers to every 100,000 people to reach the Vision 2020 status of a fully developed nation, according to the Higher Education Department.

In Singapore, the ratio is already 87:100,000, higher than the United Kingdom's 76:100,000.

THINKING OUT OF THE BOX

Most people have the misconception that creativity is a talent gifted to a few. They think you either have it or you don't. That is absolutely not true.

Creative thinking is an everyday thing.

Farmers who find a better way to get things done, a cheaper way, a more productive way, are applying creative thinking.

They are using creativity to arrive at better solutions that give them better results.

The entrepreneur who creates a new business, the engineer who designs a new highway, the architect who conceives a new building, the educator who creates an environment in school where students and teachers are comfortable exploring ideas, and the accountant who devises a new solution also are all involved in creative thinking.

Creativity is in everyone. The minute you think to arrive at a solution, you are already engaged in the creative process.

An innovative country simply means a country that has adopted creative thinking pervasively and has a culture of looking for better solutions, and has the systems to support it.

The ecosystem, therefore, has to be there.

Innovation takes place where new ideas are encouraged, recognised and celebrated. The good thing is that creativity has no boundaries and respects no borders. And it can come from anywhere, certainly it can come from here.

Size of population does not matter. Some innovative countries that are small are still among the richest economies in the world in per capita. To see this, one just has to take a look at the highly innovative countries in Western Europe which have very small populations.

The process of encouraging creativity and building innovation should be systematic. That is why countries of the Western world is ahead of most other regions because it is very systematic and very focused on quality and improvements.

Without exception, all have well developed creative industries which provide effective on-going R&D support to their industries.

Without exception, all consider creativity and innovation a strategic driver of national competitiveness.

Without exception, all these countries are driven by highly sophisticated education.

Without exception, the governments of these countries have built economic and social infrastructures that encourage and promote creativity and innovation, and talent cultivation.

People in Western countries are driven by a passion for innovation, whose efforts in making things better have brought about unimaginable advances to everything imaginable, and created immense wealth for their countries.

INNOVATIVE THINKING

For us to move forward, pervasive innovative thinking must take hold throughout our society, and right through our Government and management machinery.

As I see it, to make this happen, we need to bring about a major shift in the mindset of our people – starting from children to parents, from teachers to Government leaders, from farmers to corporate leaders.

It may have to start with the redesigning of the Malaysian mind, which has remained largely conservative. Creativity is still perceived as something frivolous by many.

It has been suggested that being creative is not part of the Malaysian culture.

It is said that the Malaysian tradition of subservience and conformity is incompatible with the culture of creative thinking, which often is about changing and breaking away from conventional thinking.

It is also said that as people who adhere strictly to religious teaching, thinking creatively goes against the grain.

It is said that, as Asians, we have a cultural inclination to blend in and not to stand out.

Now could this be our problem? Let's all think about it.

The truth is that our population is made up of some of the most talented people in the world.

The Muslim world gave us something we continue to use to this day – soap – because of the religion's emphasis on cleanliness.

Soap was manufactured in the Middle East for centuries before the West knew about it.

Muslims invented algebra and worked out the angle of the tilt of the earth. They built the first windmill, pioneered the concept of the crank rod and designed the first ever torpedo.

Muslim creativity also led to numerous other inventions that are still in use today, hundreds and thousands of years later.

Their pursuit of knowledge led them to build the world's largest libraries which they simply called "houses of wisdom".

From Egypt came the mysterious Pyramids that until today baffle scientists and engineers – a feat that cannot even be copied today. The Egyptians also built the first dam.

The Chinese invented paper around the year 105.

Gutenberg is officially credited with inventing the printing press in the 1440's. But the Chinese created a type of printing press long before that – around 200 B.C. By 1000 A.D., the Chinese had introduced books to replace scrolls – a good 450 years ahead of Gutenberg.

When the tsunami hit in 2004, we all learned of its power based on the Richter scale, which was invented in 1935. But in the 132 A.D., the Chinese developed the first earthquake sensor, 600 years ahead of the first western sensor from France.

As you know, the Chinese also invented the suspension bridge, gun powder and the first steam propelled cart hundreds of years before the first steam-propelled engine car was built in the West.

And well before Texas Instruments, China had developed the first calculator, the abacus.

The Indians were weaving cotton and wearing comfortable cotton attires 3,500 years before the West got to know about it. The Indians invented the spinning wheel of course – something the Europeans did not catch up with until the Middle Ages.

The world's first planned cities were found in India. Every house had its own bathroom and toilet 5,000 years ago!

This list goes on.

The East and the Middle East were centres of ancient inventions; they were leaders of innovative thinking and inventive creativity for a thousand years.

So all these excuses that being Asian or Malaysian make us incapable of creative thinking can only come from people who do not do much thinking.

STARTING THEM YOUNG

To be an innovative nation capable of competing successfully around the world, we will need to produce people who will break the norm.

We will need to start early, at the primary one school level.

We will need to address the conservative Malaysian mindset in the right way to make that leap into creativity and innovation.

To effectively develop our talent pool, we have to develop a system of training that nurtures and inspires the young generation to be people who want to achieve greatness. We must have a vision that they can share, a strategy that they can apply, a goal that they can aim for and be a part of.

Our school system has to be more creative in order to allow students to arrive at creative solutions. We should have fewer one right answer solutions. We should move into a situation where there can be many right answers, and not just black and white answers.

Breaking the norm, not accepting all that is handed down, and continuously seeking better and more practical solutions or more competitive options are central to the creative process.

Rules and regulations that have become stumbling blocks must be removed.

Rules and regulations that encourage people to concentrate on not making mistakes will lead to conformity and compliance, and inhibit creativity and stifle imagination. Rules and regulations that attempt to impose a one-size-fits-all structure will hamper the efforts of educational institutions to become effectively competitive.

We must make inventiveness and out-of-the-box creativity the expected outcome of our education systems and its leadership vision.

When you impose strict rules, you are stopping the students from thinking for themselves. You will be forcing them to be very dull people when the young people are naturally vibrant and full of creative energy. We must allow our young people enough freedom to express themselves. We must give them space to be the person they want to be.

Advanced countries see creativity as a key component of early education. Their school children learn about design technology from year one and move on to innovation a few years later.

The moment you get into design technology, you are already into the process of ideation; you are thinking creatively in order to design things differently; you learn about the purpose of differentiation and the pivotal role that design can play. Thinking creatively then becomes a habit.

TRANSFORMING MALAYSIA

To succeed in the long term, we must be equipped to compete with the most advanced countries in the world. That simply means we must transform this country to become one of the most creative nations on earth.

We must build the social and institutional ecosystem that produces innovative leaders at all levels. A lot of them, especially in education.

In classrooms and boardrooms; in factories and government ministries; in homes and in the local communities.

The organisational and environmental culture for innovation must be developed and put in place so as to build a strong desire for change.

Families and communities must be educated to accept that creativity and innovation are essential drivers of economic prosperity, and contributors to social and individual wellbeing.

That creativity does not mean only singing, dancing or painting.

School administrators must create a learning environment that is engaging and stimulating. It must never be boring. Learning must be made enjoyable, and gaining knowledge must be a happy experience. Only then, will students develop a love for knowledge.

REINVENTING EDUCATION

Perhaps, it is time for a new education model to be considered, one that goes beyond the conventional role of providing knowledge and teaching skills; that traditional expectation is no longer enough, if the transition to the new economy is to happen.

We are ranked in 10th position in public education spending at above 8 percent of Gross Domestic Product among countries in the world.

Clearly, ample funding and good intentions are not good enough to make that transition to developed status.

We need to do more. We may need to review or revamp or re-invent the delivery and system of education, to allow for greater flexibility and creativity.

We are not doing very well in developing the knowledge-based economy. In fact, we have not progressed at all in the past decade.

According to the Knowledge-based Economy Development Index, or KDI, developed by the Economic Planning Unit to assess Malaysia's readiness to become a knowledge-based economy, we were placed in 17th position in 2000 relative to 21 mainly developed countries.

In 2005, the KDI assessment put Malaysia at the same ranking, 17th.

The KDI is derived from selected key factors required to drive a knowledge-based economy, namely computer infrastructure, infostructure, education and training as well as R&D and technology.

This reinvention of our education system must happen if there is to be transformation so that every young Malaysian is purposefully educated, and has a part to play and a stake in moving their country forward.

We must now build for this nation a big passion for innovation. This I see as our most urgent mission.

Our goal must be to make development of the creative mind a national agenda.