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# *Bulletin of* **HIGHER EDUCATION R E S E A R C H**

## **CLMV Collaborations with Malaysia, towards Sustaining Asian Identities in Higher Education**

### **An Interview with the Vice Rector of Cantho University, Vietnam, Dr. Do Van Xe**

*By Koo Yew Lie, Munir Shuib and Rozinah Jamaludin*



Dr. Do Van Xe

The higher education landscape is changing rapidly. Driven by powerful forces such as economy, geography and technology, higher education has diversified and flourished. Online learning, for instance, is getting more common and cross-border education is becoming more popular. There have also been major changes in perception, demand, funding and governance. With such dramatic changes taking place in higher education contexts the world over, there has been rising concern for strengthening higher education in the Asia Pacific region.

Higher Education (HE) has a long history involving the exchanging of ideas and expertise across national borders. In fact, active collaboration, resource and knowledge sharing have played a key role in advancing HE.

It was with this in mind that the Ministry of Higher Education initiated the Cambodia, Lao PDR, Myanmar and Vietnam (CLMV) dialogue aimed at generating collaborations through the exchange of knowledge and ideas between Malaysia and CLMV countries. In the developing world, the

developmental needs of universities are key to sustaining the well being of communities and nations. Fundamental issues of access, equity and quality education for development are crucial.

Held on 1 and 2 December 2008, the CLMV dialogue was precisely aimed at providing a platform for synergistic collaboration and cooperation in HE. Among the invited participants was the Vice Rector of Cantho University, Vietnam, Dr. Do Van Xe.

It was within such a scenario of cooperation that this conversation with Dr. Do took place on the first evening of the dialogue in the quiet and pleasant corridors of the Boulevard Hotel in Kuala Lumpur. The interview between Dr. Do and three associate fellows of the National Higher Education Research Institute reflected on the kind of collaborations that will be of mutual benefit to CLMV countries especially for Vietnam and Malaysia.

Recognising that Vietnam is a transitional economy from agricultural to industrial economy, the Vice Rector was posed the question concerning the aspirations of HE in Vietnam to which he responded "we are at least ten years' behind in terms of HE development". The key challenge for Vietnam, he said, was access to High School as well as access to HE with the latter as a major challenge for the CLMV dialogues. According to him, in HE, only about ten percent of Vietnamese applicants are able to access HE, citing in particular the case of his own university, Cantho University, where out of 75,000 who sat for entrance examinations only 6,500 were taken in.

**"...priority should be given to Engineering and Computer Science fields as these are the niche areas which would boost the human capacity development of Vietnam."**

Pushing ahead with the question of collaboration, Dr. Do responded broadly, that due to the basic challenges on economic development, the investment on education has been necessarily limited. Hence, he suggested that major areas of collaboration would come from capacity building of university staff in terms of management, governance, quality assurance, curriculum development, developing teaching and learning, research and academic research and scholarship. He brought in what he saw the example of the Asian University Network which is a

network for building on strengths of the universities in Asia. In relation to capacity development, Dr. Do was enthusiastic on the offer from Malaysian Universities on scholarships for Vietnamese staff and students to build capacity. Indeed, he saw this to be the most immediate goal for collaboration with long-term gains and implications.

**"The key challenge for Vietnam, he said, was access to High School as well as access to HE with the latter as a major challenge for the CLMV dialogues."**

Dr. Do suggested that priority should be given to Engineering and Computer Science fields as these are the niche areas which would boost the human capacity development of Vietnam. He suggested that there could be a Malaysian University type branch campus in Vietnam citing the example of an RMIT branch university in Vietnam.

Dr. Do applauded Malaysia's attempt to initiate research collaborations which had been raised in the morning's proceedings. Further, he suggested collaborations between Vietnam and Malaysia in terms of strengthening governance and management in HE. He suggested that Malaysia "help us to manage the University in strategy planning, quality management, quality assurance".

More broadly, Dr. Do warmly responded to the idea of 'the Asian way in Higher Education' - one which is suitable to the culture and the wisdom of the region emphasising in his own words, 'Asian cultures, essences and values' while being open to what is positive from other cultures. In this regard, he saw student and cultural exchange between CLMV countries and Malaysia as highly important taking CLMV students beyond what he considered to be the limited learning from conventional books.

Such reflection gained through the interview will, it is hoped, lead to CLMV collaborations with Malaysia with an Asian identity; a collaboration that is sustainable, holistic and integrated within the vision of a HE for a fairer and more equitable Asia within the wider challenges of the global marketplace and global competitiveness. The CLMV dialogue was but an important first step in this direction.

# Universiti Sains Malaysia: A Project for a Sustainable Future

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Universiti Sains Malaysia's (USM) sustainable university agenda places USM at the centre of philosophical and practical debates about the nature and role of a University in the current global and local context. The effort to intellectually understand and articulate the USM model is of critical importance to its success and by inference to the national interest of Malaysian society. One quick way of articulating and understanding the 'USM project' is to understand that USM's educational mission finds itself engaged and buffeted by three central problematics of the current hyper-modern age: ecological crisis, the problems of neo-liberal capitalism and religion and human dignity.

The critical assumption of USM's approach lies in the recognition that these issues are defining problems in education. In other words the challenges of knowledge creation and dissemination within the knowledge economy and university is tied closely to the kind of society and shared values that such a society aspires to and articulates. USM seeks to engage the problematic issues of Malaysian education and the global tensions within which educational practice exists within an enhanced and dialectically nuanced philosophy of sustainability. This philosophy is well grounded in contemporary social and pedagogical theory. Arguably the most significant intellectual support for such a project comes from the work of authors such as Amartya Sen whose work in sustainability ethics and the pedagogical implications of education for human and humane capabilities provides deep theoretical support for the innovative work done at USM (Sen, 1999).

A large measure of the USM strategy in engaging globalisation aims to challenge the framing of globalisation as the simple imposition of neo-liberal culture economics and social relations. The reasoning for this is important. USM is engaging in a project of cultural respect and human dignity. Perhaps a better way of putting this is to say that USM's sustainability project is fundamentally one of social justice, cognitive growth and ethical development and human respect. The fundamental point is that in its engagement with globalisation, civil society, socially constructivist pedagogy and civil Islam, USM's strategic intervention represents a democratic ethos at odds with the authoritarian and culturally oppressive ideology of neo-liberal globalisation (Cogburn, 1998; Mandal, 2000; Mustapha and Abdullah, 2001).

Framed within a broader commitment to social justice, sustainability and an engaged approach to the common good, difference and educational nurturing in USM take on a depth of meaning and articulate a direct challenge to forms of globalisation that appear to impose a one size fits all approach to Higher Education's educative mission. This one

size fits all approach of neo-liberal reform presents itself as a *fait accompli* a kind of global social Darwinism where if you do not fit the model you fail. The critical assumptions behind such an approach include an all - encompassing homogenising approach to social development and a ruthlessly unrelenting certainty in its precepts and aims as being the only or correct form of globalised practice. USM's aims stand in stark contrast to this project. Based on the ethical precepts of sustainability, USM's articulation of its educational mission draws upon the best that social and educational theory has to offer (Etzkowitz and Zhou 2006; Shore et al. 2003).

**"USM is engaging in a project of cultural respect and human dignity."**

An essential theoretical and practical point that needs to be stated is that USM's reform agenda must be viewed within multiple rubrics or spaces. Another way of saying this is to point out that USM's aims address multiple publics (Bryant, 1993; Eliasoph, 1990; Eliasoph, 1996; Fraser, 1990; Fraser, 1992). Understanding the public sphere as not one all encompassing and homogenising whole but rather as a multiplicity of voices and discourses provides us with a way of theorising the mission of a university outside of the constraints of neo-liberal hegemony. This observation in regards to USM's strategic positioning is critical to grasp if we are to fully understand the relationship between USM's University reform agenda and globalisation. The idea that neo-liberal globalisation is the final word on the meaning of globalisation is an attempt to strip from neo-liberalist dogma its normative, political and cultural values which infuse it. In other words, the claim of neo-liberalism to universality hides from view its cultural and ethical specificity.

The USM model takes seriously the important role universities play in social development and civic engagement. USM's pursuit of the common good and betterment of Malaysian society is a central plank in its educational approach. This approach is not simply expressed in homilies to improvement. Rather it is the expression of USM's essential philosophy. The clustering of Social Science and Humanities under the rubric 'social transformation' provides us with an insight into the USM approach. The recognition that global problems are interrelated and that change needs to be aimed at changing 'the system of our

society' is a clear insight into the fundamentally political and social mission of a university. The recognition that all 'sectors of the society consult and actively participate in decisions relating to sustainable development' and that the USM mission in part is 'extending its reach to the local community'(2008) is a good example of the civic role USM aims to play.

**"By linking to local communities and NGOs USM increases its legitimacy with civil society and makes its research and scholarship relevant to Malaysian society in ways more lived and practically useful."**

USM's efforts in this direction are impressive, and find expression in citizenship projects and environmental projects in the broader Penang community. The specific engagement of USM with the broader society (civil society) not only links USM with the broader community, the RCE platform links USM to community activists, NGOs and others in a strong bond with broader civil society. This link to NGOs connects USM through civil society to a broader public sphere that is international and global as well as local. This connection is significant. Malaysian political and social change is in many respects finding its deepest expression in civil society and community oriented action (Weiss and Hassan, 2002; Weiss and Hassan, 2002). USM is also engaging 'the emergence of a kind of transnational civil society undergirded by non-governmental organisations' (Brown et al. 2000) as well as broader state based but more autonomous institutions such as universities (Florini, 2000).

This strategy is part of an effort to make real the promise of localised responsibility. However, its meaning is deeper than that. By linking to local communities and NGOs USM increases its legitimacy with civil society and makes its research and scholarship relevant to Malaysian society in ways more lived and practically useful. The USM strategy has important implications for pedagogy. The pedagogical approach at USM ties together an engagement with civil society and change and at the same time recognises that educational growth requires direction and moral value. Creativity must be tempered by civic responsibility. Innovation is produced through a commitment to respectful social interaction and the articulation of human values, not despite them. This combination of civic and social responsibility, cultural respect and cognitive growth is the key stone of USM's educational approach. Finally, USM's

model is an important voice within a growing Islamic public sphere.

USM's engagement within a dynamic and vigorous Islamic public sphere acts as an important conduit not only to the Islamic world but also reinvigorates the discourse of globalisation. The importance of USM's role in engaging and representing the democratic and globally responsible dialogue within Islam is a model of practice that negates otherwise simplistic caricatures and prejudices. In this sense not only is USM's practice a model for Malaysia but also a Malaysian model for the world (or sections of it). Understanding the notion of an engaged and culturally dynamic Islamic public sphere in this way provides us with a critical referent to reengaging the discourse of globalisation, education and democratic social and civic engagement. The point of the argument is not to assert that USM is an Islamic institution as such. The point is to assert that USM provides an important model within an Islamic public sphere and as an engagement outside of it. The implication and necessity of theorising this and connecting it to critiques of globalisation, effective learning for the knowledge economy and democratic change for social justice is arguably one of the most important contributions USM can make to global society and to the establishment of cultural respect and democratic theory. Framed in this fashion the notion of sustainability speaks to multiple publics and engages the idea that institutions of learning are essentially institutions of cultural change, growth and respect.

**"... not only is USM's practice a model for Malaysia but also a Malaysian model for the world (or sections of it)."**

The fusion of dignity with sustainability and the recognition that knowledge and identity are multifaceted and ultimately justified by their contribution to human betterment provides a critical anchoring to the USM project. USM's contribution to this debate is historically prescient (Ali, 1984; Bakar, 1981; Zinkin and Williams, 2006). The historical opening for the USM project lies ahead. USM provides the moral argument for the continued development of institutions within a democratic and civil Islamic public sphere (among many others) that is a critical voice for Malaysia and a necessary voice for the rest of us. USM's role in enhancing innovation, public service and individual growth is an expression of an educational mission that ties learning, innovation and creativity to sustainable human dignity and cultural recognition. This project is critical for Malaysian national development and places USM at the centre of global debates about the meaning of education.

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\*Dr. James Campbell was invited by Universiti Sains Malaysia to comment on Transforming Higher Education for a Sustainable Tomorrow, also known as the 'black book', and share his thoughts on the book from a humanistic point of view.

# Strengthening Postgraduate Programmes towards Research Excellence and Industrial Relevance Foresight of Biotechnology Industry Needs

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## Introduction

Globally, modern biotechnology is now a little over three decades old (Baltimore, 2008). Having gone past the infancy stage it is now in its maturing phase of striving to achieve its agenda for the millennium, namely to heal, feed, fuel and clean the world. In Malaysia, the industry lags behind achievements by the major global players (Ahmad Zaharudin, 2005). However, significant growth has occurred during the current Ninth Malaysia Plan (9MP) primarily due to strong political will. There has been a substantive increase in commitment of resources to support the National Biotechnology Policy (NBP) launched in April 2005 (Abdullah, 2005). The budget allocation for Science, Technology and Innovation (STI) more than doubled (Table 1) between 8MP and 9MP (Ninth Malaysia Plan, 2006), and has accordingly encouraged significant growth of the industry. Biotech Corp reports that 92 BioNexus companies with a total approved investment of RM1.3 billion have already been established (Iskandar, 2009). Without a doubt, it is the Government that drives the Biotechnology Industry in Malaysia.

**TABLE 1: Budget expenditure and allocation for S&T&Innovation (2001-2010)**

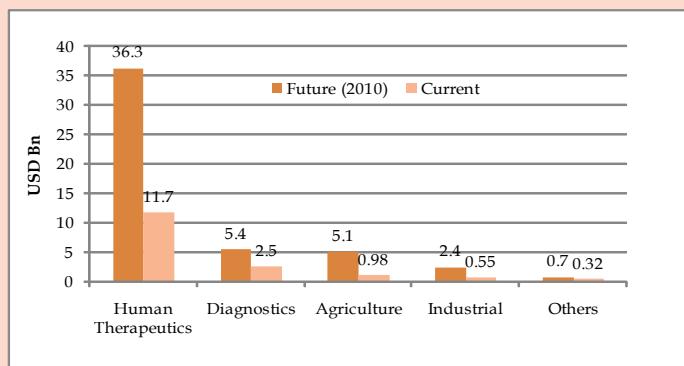
	8MP	9MP
	(RM millions)	
R&D	926.6	1,581.6
Technology Acquisition	70.7	142.6
Commercialisation of Technology	267.5	1,843.3
S&T Human Resource Development & Awareness	123.1	650.6
S&T Infrastructure	1,950.0	1,035.1
<b>Total Allocation</b>	<b>2,337.9</b>	<b>5,253.1</b>

Source: 9MP Doc., Economic Planning Unit, 2006-2010

It is against such a scenario that this report, on foresight of the needs for the biotechnology industry, is presented as an appropriate framework towards strengthening postgraduate programmes geared to achieve research excellence, as envisaged for Malaysia (Malaysia and the Knowledge Economy: Building a World-Class Higher Education System, 2007) that will in turn impact on developing the national biotechnology industry. What is required is to introduce postgraduates to the Blue Ocean Strategy (Kim and Mauborgne, 2005) in their research training so that they will be the catalyst for further development of the biotechnology industry and compliment one of MoHE's Strategic Plans, which is to generate 100,000 world class Science and Technology doctorates within 15 years (Ministry of Higher Education, 2005).

## What is the Future for Biotechnology?

The global market is predicted to expand to reach a value of USD1.76 trillion by 2050 (Beyond Border: The Global Biotechnology Report, 2008)! If Malaysia aims to harness even 0.01 per cent of this market it will amount to a total value of USD176 billion by 2050! Based on a survey conducted by Ernst and Young in 2002, the global biotechnology industry is set to move forward significantly in four major fields, namely human therapeutics, diagnostics, agriculture, and industrial with the prime mover being in healthcare where a larger than three-fold increase is expected to occur by 2010 (Figure 1), while agricultural and industrial biotechnology will more than double in value. The prognosis is therefore, very good for growth of the industry.



Source: Report on Global Biotechnology, 2002

**FIGURE 1: Global biotechnology industry**

While Malaysia needs to take note of these global trends, R&D training should be directed primarily towards working on local solutions to regional and global problems. The abundant natural resources are there to provide the raw material from which innovative new solutions may be derived. There are three main areas of focus for development of the biotech industry in the country, as stated in the NBP (Ahmad Zaharudin, 2005; Abdullah, 2005). These are Agribiotechnology, Healthcare-related Biotechnology and Industrial Biotechnology. Malaysia's Biotech strategy is to responsibly exploit its mega biodiversity of plants, animals and microbes in order to create new economic opportunities for wealth creation and social well-being of its people, through better health, food, fibre and fuel, while judiciously conserving natural resources and the environment. The targets set by the NBP are to create by the year 2020, 280,000 jobs in the biotech sector as well as to establish at least 400 biotechnology companies and to attract RM270 million per annum in investments.

## The Biotechnology Industry in Malaysia

The current status of the Biotechnology Sector *vis a vis* Human Capital Development, R&D activity and Industry, as summarised in Table 2, shows that biotechnology presence in the country is quite limited. Forty-three institutes help to train man-power for the sector, while only 95 entities are actively engaged in the biotechnology-related businesses (Biotech Clusters, March 2009).

**TABLE 2: Entities in the Malaysian biotechnology sector**

Institutes for Human Capital Development and R&D Training	Number
<b>Universities</b>	
Public	15
Private	15
<b>Research Institutes</b>	13
<b>Biotech Companies and Related Activities*</b>	
Agriculture	21
Healthcare	28
Industrial	3
Bioinformatics	9
R&D	5
Incubators	24
Others	5

\* Includes 13 GLCs (Government-linked companies)

Source: Biotech Corp (Biotech Clusters, 2009)

This situation is unsatisfactory. A new paradigm promulgated by MoHE is for "A People-led Economy" (Ministry of Higher Education, 2006), the rational being that researchers with in-depth knowledge will be able to generate new technology platforms to innovate new products ("brain power *versus* brawn power!!"). The process flow will then proceed smoothly through the route of R&D → Technology → Innovation → Funding → Market.

All R&D activities require funding. In developed countries, funding is almost equally supported by public as well as private enterprise (Beyond Border: The Global Technology Report, 2006). However, in developing countries less than one per cent of R&D funding comes from the private sector. In Malaysia, this is especially so for the fledgling biotech industry (Ahmad Zaharudin, 2005). As such, it is initiatives by the Government that have stimulated growth of the industry. In particular, two policy documents present the foresight framework for the Biotechnology industry, namely Chapter 6 on Biotechnology, in the 9MP (Ninth Malaysia Plan 2006-2010) and the NBP document of April 2005 (Abdullah, 2005). Research and development as well as commercialisation of biotechnology-related science have been programmed to develop in the following three major areas: Agricultural Biotechnology, Healthcare - related Biotechnology and Industrial Biotechnology, with a supportive role from Bioinformatics. Research in Biotechnology began more than two decades ago and reasonable expertise is now available. Arising from this

and present developments in the industry, it is timely to take stock on the status of R&D activity in these areas. The anticipated developments in the short-to-medium term as well as the medium-to-long term are set out in Table 3.

Table 3 outlines in general terms, the specific areas where current research and development in biotechnology is ongoing and what probably lies ahead. The specifics need to be carefully developed to ensure knowledge-based economic returns. Current strengths need to be capitalised on and new innovative approaches sort to solve national issues. Primarily, these include: wealth creation, food security, alternate/renewable energy, environmental degradation, water resource management, health and wellness of the people. Blue Ocean Strategies (Kim and Mauborgne, 2005) need to be developed to address these within the framework of what is already available in terms of resources and knowledge banks.

In particular, since Malaysia is globally recognised as a country that has built up an impressive knowledge-bank in plantation crops, the tools of modern biotechnology should be judiciously used on these crops for potentially gainful economic returns. The crops of interest include oil palm, rubber, coco, and rice as well as horticultural crops like tropical fruits, flowers and vegetables. In Animal Biotechnology, attention should be on the fledgling livestock industry in cows, goats, the established swine and a robust poultry industry. Aquaculture and marine biotechnology for tropical fishes and marine organisms (including seaweeds) should be developed further so that new industrial and food-based products can be introduced.

Although the Healthcare Industry is receiving a lot of support globally, its R&D has focused on diseases and issues relevant to temperate countries (Beyond Borders: The Global Technology Report 2006; 2008). It is time for Malaysia to address R&D issues pertaining to local and regional scourges and health-related problems e.g. dengue, typhoid, cholera, tuberculosis. The long-term focus should be to also develop innovative products from our wide biodiversity as viable solutions to address health and well-being issues. Indigenous knowledge in traditional foods and remedies should be documented and researched on. It would provide a conduit to new intellectual property with potential for the start of a green - gold economy in Malaysia. In the short-term, customising vaccines and diagnostic kits for local applications is providing important value-added products.

Industrial biotechnology readily draws upon innovation arising from the knowledge - base in Agricultural Biotechnology and Healthcare and Medical - related Biotechnology. Energy and environmental issues will see new products such as biofuels, and environmentally friendly-technologies for pollution control and water and resource management develop so long as researchers are suitably trained to handle these new challenges. Expanding downstream processing of produce such as rice and plantation crops, herbs, fruits and vegetables should also stimulate the food industry with value-added products for

**TABLE 3: Foresight for Biotechnology Industry - Focus areas (2006-2020)**

Area	Short-to-Medium Term (2006-2012)	Medium-to-Long Term (2012-2020)
Agricultural Biotechnology	Clonal propagation of selected horticultural, plantation and forestry crops	Clonal propagation of commercially useful recalcitrant plants and new crops (e.g. for biofuels, biopharmaceuticals, biopharming)
	Innovative seed production technologies	Cryopreservation and artificial seed technology
	Improvement of selected livestock and poultry through <i>in vitro</i> technologies	Transgenic livestock with genes that add value (e.g. disease resistant, better meat quality)
	Crop improvement by conventional methods	Crop improvement by molecular breeding and transgenic technology
	Aquaculture of selected ornamental and commercial fish, prawns and other aquatic organisms	Aquaculture of transgenic fish for disease and pest control; improved nutritional/food value
	Transgenic production of selected crops with genes for pest and/or disease resistance/tolerance	Production of selected transgenic crops with value-added qualities, e.g. nutritionally enhanced or better quality; enhanced postharvest longevity; reduced chemical and other inputs (e.g. water, fungicides)
	Food production from down-stream processing of fresh produce (e.g. edible oils, fruits, vegetables)	Food processing from new, value-added transgenics and non-transgenics (e.g. heart-healthy cooking oils; orphan crops)
	Halal food production and development of biomarkers	Halal food bio-validation and certification
	-	Genomics, proteomics of selected plants and animals; gene mining to unravel gene regulation of novel and useful characteristics
Healthcare Biotechnology	Development of diagnostic kits vaccines and other biologics for major infectious tropical diseases	Development of new biopharmaceuticals, nutraceuticals and cosmeceuticals from natural resources, especially plants used as traditional/complementary medicines, or health products
	Herbal product development and quality characteristics	Systems biology to understand mode of action of selected herbal plant products
	Biomarkers for major diseases and health-related problems in Malaysia; association with ethnicity	Proteomics, genomics and systems biology of major illnesses and diseases
	Bioinformatics of genes associated with major diseases and illnesses	Pharmacogenomics and personalised medicine
	Stem cell banking technology	Stem cell science; tissue engineering
Industrial Biotechnology	Bioremediation of biological, industrial and environmental wastes	Development of biocatalysts for selected industrial applications
	Feed production from natural resources and biological wastes	Recombinant technology to harness useful microbes for bioremediation and selected industrial processes
	Down-stream processing of selected fruits and plant products	Production of recombinant proteins for food and feed preparation
	Biofuel from edible crops	Biofuel from non-edible crops
	Development of clean air and water technology	Development of biosensors for industrial applications (e.g. environmental pollution)
	Bioreactors for food and feed industry	Recombinant technology for use in selected bioreactor systems
	Special industrial production systems e.g. for cultivation of mushrooms; seaweeds	New biomaterials for industrial applications; nanobiotechnology
	-	Genomics of selected microbes useful for industrial applications

the local and international market. The Nation's various culinary customs provide numerous possibilities for innovative developments that could help local foods penetrate into global markets. The possibilities are countless for the ingenious mind!

#### Postgraduate Training Programmes for Biotechnology

"People are the same around the world; free them and they start expressing their individual creativity" (Baltimore, 2008). If that is the case then, it is essential that the teaching and

training curriculum, especially at the tertiary level (inclusive of postgraduate training) should be especially liberating and should stimulate critical thinking and ingenuity in order to encourage new discoveries and new innovations. The industry is especially in need of such scientists.

The brick-and-mortar to build a solid foundation must still be a bedrock of relevant basic information essential to successfully mould the graduate into his field of choice. Table 3 indicates that the exposure should be varied

enough to enable the Malaysian postgraduate student of biotechnology to delve into R&D areas relevant to Agricultural Biotechnology, Healthcare and/or Industrial Biotechnology, as these are the strategic areas projected for biotechnology development in the country. Postgraduate biotechnology programmes should have embedded in them a good balance of the basic and applied sciences, whether the programme is project- or course work-based, for it is basic science that makes the leap to produce the breakthrough concepts. Additionally, an exposure to the main elements of good entrepreneurship is also essential since discoveries and innovations in biotechnology eventually find a home in a commercial environment. Finally, training in critical thinking that is out-of-the-box and directed to innovative solutions will ensure that the postgraduates will be able to play a vital role in rapid development of the biotechnology industry in the country.

**"Training postgraduates towards research excellence and industrial relevance in biotechnology, can be realised if postgraduates are exposed to R&D handled via a Blue Ocean Strategy that is fuelled by a relevant amount of basic research."**

Without doubt, the building of science and technology capability is a long-term effort and several developing countries are rapidly moving forward in following this agenda (Baltimore, 2008). Countries with the political will to support it in a sustainable manner by high quality human capital development, commitment of adequate resources and the implementation of harmonious regulatory regimes will no doubt reap the benefits of working on local solutions to global problems. The country can then rightfully claim a place among the developed nations of the world!

## Summary

- The Biotechnology Industry is at an early phase of development in Malaysia.
- The primary objective of biotechnology development is for wealth creation and social well-being.
- The primary driver is the Government.
- There has been significant growth since the launch of the National Biotechnology Policy in 2005 and the Ninth Malaysia Plan (2006-2010).
- The Industry revolves around Agricultural Biotechnology, Healthcare-related Biotechnology and Industrial Biotechnology.

- Forty-three institutes are involved in Human Capital and R&D training for the biotechnology industry.
- At least 95 companies are engaged in biotechnology-related activities.
- The Biotechnology Industry requires postgraduates with high knowledge content and good R&D skills in relevant areas pertinent to the industry.
- R&D focus in biotechnology should be to look for local solutions to regional and global problems, by effective team-work.
- An R&D priority should be to draw on available strengths and expertise in the agricultural and plantation sectors.
- Innovation and new product/technology development efforts should focus on indigenous resources among plants, animals and microbes.
- Particular research focus should be given to achieve food security, develop non-food-based biofuels, remedies for tropical diseases, new and innovative products as nutraceuticals, cosmeceuticals and biopharmaceuticals and a clean environment.
- Training postgraduates towards research excellence and industrial relevance in biotechnology can be realised if postgraduates are exposed to R&D handled via a Blue Ocean Strategy that is fuelled by a relevant amount of basic research.
- Basic entrepreneurship training is essential for biotechnology graduates.
- Well-trained postgraduates who also have good communication skills will help to drive forward the biotechnology industry in the country.

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# Practitioner-Centred Research on Academic Development of Higher Education in Malaysia

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## Introduction

Endowed with one of the most dynamic and competitive economies in Southeast Asia, Malaysia is gradually differentiating and improving the quality of its higher education. The practitioner-centred research (*PCR*) is one of the initiatives aimed at generating successful professional practices in the field of academic development. *PCR* is a research method that can be conducted to influence professional practices. Unlike other traditional or theoretical research methods, *PCR* provides an immediate impact to a practitioner's action plan, especially when practitioners themselves undertake research activities.

Higher education development is signified by effective teaching and research, human capital development and a holistically-inclined academic staff. It also entails the creation of new knowledge and contributions to society. These are the main factors that determine the future overall quality, reputation and progressiveness of Malaysian higher education.

In Malaysia, there are gaps in research, research findings and research practices within the circles of higher education, and they are perennially plagued by a lack of connectivity between knowledge, data and subsequent implementation (Ibrahim et al. 2008). Very often, it is difficult for practitioners to locate and implement findings from their research activities (Ibrahim et al. 2008).

In addition, knowledge possessed by practitioners can be classified as "underutilised resources." As a consequence, most research undertaken does not directly answer real concerns and issues in the actual field. To put matters worse, most research activities have contextual problems.

The impact *PCR* can make on higher education is in sync with the key thrusts of the Ninth Malaysia Plan, especially with regards to human capital development. This, in turn, will boost the nation's capacity to increase knowledge and innovation within the workforce. The actualisation of Malaysia's ambitious regional educational hub plans should be taken seriously by practitioners of higher education. Through the *PCR* approach, Malaysia can further generate value creation and innovative research activities for its education and industry. This will lead to a self-generating qualitative improvement for research-based creativity at the higher educational level, and will induce positive practises for collaborative researches.

## Practitioner-Centred Research on Academic Development

*PCR* is a research approach that influences actual professional practices. Unlike other traditional research

approaches, it leads to a higher level of academic development as well as enhanced quality practices among scholars. In other words, it is a method that is timely and effective for practitioners who are engaged in research initiatives that can impact the quality of higher education in Malaysia.

**"The Malaysian higher educational practice can be improved if evidential references to the *PCR* approach are generated continually."**

Currently, most Malaysian universities have not adopted the *PCR* approach directly for the development of academic capital. This can be seen from the scant amount of research conducted locally. According to Mohamad (2008), universities in Malaysia need to improve their academic and research performance, and build their reputation by creating an informed and dedicated learning process. This echoes with a contemporary need to engage *PCR* at the higher education level in our country vis-a-vis traditional research approaches. In other words, the development of academicians in Malaysia is either too theoretically based or to a very large extent, irrelevant and ill-suited for actual industrial practices. On the other hand, researches with industrial applications are traditionally conducted by professional researchers.

The *PCR* approach is a highly relevant research method for practitioners. It is based on professional practices, rather than being dependent on mere theoretical assumptions and frameworks. Indeed, the developmental mechanics of academicians following the traditional research approach has led to a failure in producing action-oriented researchers who can solve real issues and problems in the higher education levels and industries.

Therefore, with *PCR*'s importance and significance already an established fact, it is timely for Malaysian universities to re-focus the development of their academic staff and research modus operandi based on the *PCR* approach. Furthermore, the *PCR* method allows enough space and flexibility to immediately address pressing issues facing practitioners. It also provides an infrastructural platform and technical expertise to address actual issues.

The PCR is therefore highly relevant as an enabler to attaining academic development and desired research outcomes. This approach can answer some of the possible research questions on academic development. They include:

1. Teaching and learning: For instance, how do Malaysian academic staff learn their subjects? Which teaching and learning strategies are the most effective? And under what contexts are they deemed most effective? And what impact does various assessment approaches have on learning and teaching?
2. Academic performance: For example, what are the differences in the performance of Malaysian academic staff? How did these differences happen? What are the reasons for these differences? How can we understand the magnitude of these differences? To what extent can these differences be attributed to academic development strategies, practices or government policies?

When the PCR approach is applied to these research questions, the outcomes are expected to provide new perspectives towards a more systemic and practical understanding of current academic development issues.

### Types of Researchers in Higher Education

Currently there are generally three types of researchers at higher education level in Malaysia, namely:

1. The Educational Developer who does some research while delivering teaching and learning programmes for new academic staff.
2. The Professional Researcher who conducts (usually) small-scale research through a wide range of research methodological approaches, according to specific topics across institutions. These are aimed at generating new educational theories.
3. The Researching Professional who applies the PCR approach to various research questions – all aimed at offering solutions for actual organisational problems and practitioners' issues in the field of academic development.

Undoubtedly universities are competitively focused on the academic development of their staff. These efforts should encompass all possible activities where academic staff are engaged in proper research methodologies. This, in turn, is expected to contribute to the creation of new knowledge. However, PCR is more effective in delivering solutions to practitioners' problems and will help them translate the implications of their research into the appropriate contexts (Altbach, 2007; Guba and Lincoln 1994). Thus, PCR is about improving professional practices by focusing on the application of usable knowledge. Bourner et al. (2000) suggests professionals need to be assured that appropriate practices will work in their specific contexts for academic development.

Academic development therefore is seen as a way to produce knowledge contextually as it is based on in-depth interpretative enquiry of one situation that involves the

implementation, assessment and upgrading of components in the practice of higher education. In a nutshell, it is about the knowledge process; on how to get things done practically (Eraut, 1995). The Malaysian higher educational practice can be improved if evidential references to the PCR approach are generated continually. It will definitely facilitate positive encounters with future challenges in higher educational practises.

### The Conduct of Practitioner-Centred Research

As far as the implementation and conduct of PCR is concerned, one needs to first relate to research questions such as:

1. What are the most important questions which the PCR seeks to answer?
2. How can professional practices be enhanced by the PCR approach?

This leads to specific focus on real issues such as the academic development of higher education in Malaysia. The PCR is aimed at overcoming problems like limited impact and lack of effect which result from traditional and theoretical research on professional practices. PCR focuses specifically on 'practice' and it fulfils a research function which is outside the research scope of other theoretical methodologies.

Secondly, the PCR is specifically intent on creating new professional practical knowledge and professional practitioners. Practitioners cum researchers can have overwhelming discretion on adopting new professional practices based on their professional judgment. Indeed, when it comes to adopting a new practice, the question, 'Can it work for me?' is more important than 'Does it work?' for practitioners.

In light of this realisation, and based on one seminal research that utilised PCR, Krell and Dobson (1999) suggested that in order to translate PCR output into practical knowledge, practitioners themselves need to decide on the methods by which contextual information is disseminated. This can be based on the following three elements:

1. Sufficient information about the emergent professional practice per se so as to replicate it in the specific context where it has been successful.
2. Sufficient information about contextual factors on which the new practice depends. This will enable other practitioners to decide whether the practice can be applied to their own specific contexts.
3. Sufficient details of the beliefs and values that underpin the practice to enable other practitioners to decide whether it may be applied to their own practice.

Practitioners therefore need to be explicit about their actual research context. Krell and Dobson (1999) encourages the use of 'magic' in teaching organisational behaviour, while Webber and O' Hara (1997) advocates forming 'action learning sets' in management education programmes.

Both dissemination techniques seem to be constructive and appropriate for practitioners' adoption when it comes to considering methods of information sharing. This is particularly effective for academic development purposes.

**"PCR unquestionably plays a more critical role in generating 'practice - based evidence' for practitioners of higher education in Malaysia. Universities in Malaysia therefore should be encouraged to research academic development through this influential practitioner-based approach of knowledge-sharing."**

#### **Strengths and Limitations of Practitioner-Centred Research**

PCR enables practitioners to assume ownership of the research, and allows them to be individually focused (Altbach, 2007). Unlike other researchers, PCR researching professionals can focus on their own practice and simultaneously manage their own research process. This fine-tunes the process of continuous testing, refining and application of new educational ideas.

If the new idea works, practitioners will then be in a position to disseminate findings and results of their studies, and enable other practitioners to possibly adopt the new development. The ultimate purpose of these new developments will then be translated into professional knowledge.

The only limitation of the PCR is one faced by other research techniques; it is subject to self-created-biases that will affect validity and reliability especially during the research stage. However, this problem can be overcome by better research designs and procedures.

#### **Conclusion**

PCR researching professionals now have better opportunities for incisive research on respective practices. PCR unquestionably plays a more critical role in generating 'practice - based evidence' for practitioners of higher education in Malaysia. Universities in Malaysia therefore should be encouraged to research academic development

through this influential practitioner-based approach of knowledge-sharing.

To summarise, PCR is more advantageous than prevalent research approaches in terms of its distinctiveness and specific intent, and it is supportive of expected and targeted academic development. However, the application of this research-based approach should be further discussed within Malaysian universities (for further development and refinement). Furthermore, some leeway should be given to the most innovative and effective methods of implementing and undertaking research for academic development. It is imperative that practical, tangible, and achievable ways are sought to improve practitioners' outputs. This consequently will improve the academic quality of higher education in Malaysia.

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# In Search of Quality Education: The Implementation of ISO 9000 Quality Management Standards

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## Introduction

The quality of higher education institutions (HEIs) has often been a subject of concern by relevant authorities around the world. For example, there have been reports about the closures as well as non compliance of HEIs (Aldridge and Rowley, 1998). These situations have made the authorities and general public wondering if the quality of higher education meets people's expectations. This is because, like many other industries, higher education also needs quality. Thus, apart from the authorities' concerns, the increase in competition as well as greater expectations from customers have caused HEIs in many countries to focus on quality. With so many HEIs competing with each other to gain larger market share, customers are largely spoilt for choices (Ho and Wearn, 1996). Therefore, creating quality services might separate one institution from the other. In addition, there are also many examples of organisations that managed to integrate quality into a successful competitive strategy (Kanji and Thambi, 1999). It also appeared that many HEIs have decided to emulate these organisations in addressing the competition (Yeo, 2008). This is because in a world where branding is the main basis for competition, assurance of the highest standards of quality in education has been perceived as the strategic aim to internationalisation of higher education industry (Grant et al. 2004).

**"The increasing pressures to improve the quality of education have pushed a number of these institutions to take a step further in their quest for quality assurance by certifying themselves with the ISO 9000 standards."**

In order to turn Malaysia into a regional educational hub, the Malaysian government has encouraged HEIs to take ownership of their courses and be more accountable towards the delivery systems for such courses. In fact, several initiatives have been taken by the government to strengthen the image of HEIs such as the establishment

of a specific Ministry responsible for higher education in 2004 (Ministry of Higher Education, 2009). The setting up of this ministry reflects the country's commitment towards creating an environment that is conducive for institutional excellence. It is also the intention of the ministry to ensure quality delivery in higher education (Ministry of Higher Education, 2009). In relation to this, the Malaysian government set up the Malaysian Qualifications Agency (MQA) in November 2007 with the coming in force of the Malaysian Qualifications Agency Act 2007. The main role of this agency is to implement the Malaysian Qualifications Framework (MQF) as a basis for quality assurance of higher education and as the reference point for the criteria and standards for all national qualifications. The MQA is responsible for monitoring and overseeing the quality assurance practices of the HEIs.

## The ISO 9000 Standards and the Education Industry

While HEIs are qualified to establish their own quality systems, the efforts are self accredited and might not gain recognition from others. The increasing pressures to improve the quality of education have pushed a number of these institutions to take a step further in their quest for quality assurance by certifying themselves with the ISO 9000 standards (Baharun, 2003; Othman and Ng, 2007; Zailani et al. 2006). The adoption of such a system by the HEIs is intuitively customer oriented and market driven (Peters, 1999). With the implementation of a visible quality management system, these organisations hope to attract not only local but also international students.

As the quality assurance effort pushed its agenda into the education industry, those involved in the industry believed that adopting the ISO 9000 quality standards was paramount for the industry's survival (Thonhauser and Passmore, 2006). These standards are a set of guidelines that can be used to formulate quality management systems that are applicable to manufacturing or service organisations (Kantner, 2000). However, the transition of ISO 9000 as quality management standards for manufacturing industry to education has been controversial and far from smooth even though ISO standards are widely used in the industry.

In relation to HEIs, the requirements of ISO 9000 standards comprise several components. These components include the syllabus and school leavers as input, teaching and learning processes as products realisation, assessment as quality control and graduates as output. All these components are considered as part of the ISO 9000 standards and functioning parallel to their counterparts in the manufacturing environment (Moreland and Clark, 1998;

"MS ISO 9001:2000 Quality Management System", 2009). Each of the components might contribute potential issues and problems to the implementation of the ISO 9000 standards by HEIs (Subramaniam, 1998). As an example, graduates might be not able to secure employment because they failed to meet the industrial demands. In other words, the companies are manufacturing the wrong products that are not meeting customers' requirements.

### Issues in Implementing ISO 9000 Standards

There are a number of issues related to the implementation of ISO 9000 standards in the manufacturing environment and in higher education. Among the issues that require further understanding are the interpretation of students as customers or products, the treatment of continuous improvement in the context of higher education as well as the adoption of effective design and delivery of course contents.

BSI Quality Assurance (1995) defines the products of HEIs as the knowledge, understanding and the enhancement of competence of the students as a result from learning experiences. The customers are defined as any students, organisations or any individuals who purchase the education service from the institutions. However, Yeo (2008) believed that interpreting students as customers might not be that simple. From the marketing perspective, students can be perceived as customers since having satisfied students would enhance an institution's popularity and marketing profile. Operationally, Yeo (2008) stressed that students could also be treated as products, which are the outcomes of the educational system. Thus, how they are perceived determines the direction of the quality management systems.

In relation to the continuous improvement, the education environment is compelled to be more transparent about the learning activities as the quality systems require HEIs to document procedures, collect records and conduct internal quality audits (Shutler and Lachlan, 1998). Nevertheless, the requirement for implementing corrective measures is having a different situation. This is because, even if the institutions become more transparent, improving the quality of learning outcomes is still difficult. There is no assurance that the HEIs will be able to immediately act on any quality issues after all the shortcomings have been identified and highlighted.

Apart from that, developing effective design and delivery of course contents may also cause great challenges to the HEIs. The ISO standards place strong emphasis on identifying customers' needs and expectations. The customers' requirements should be incorporated into the implementation of the ISO 9000 standards to ensure satisfaction. However, it will be very difficult for HEIs to comply with the ISO 9000 requirements because the course structures may emphasise on theoretical aspects whereas the students might want to acquire practical skills. Furthermore, there are no explicitly effective teaching and delivery methods (Yeo, 2008). In fact, Osborne (1997) has highlighted

that there was a case of a German student suing an education institution for failing to provide a relevant science education. Shutler and Lachlan (1998) concluded that failure to comply with the requirement showed that a different approach might be needed for the education environment.

**"... the challenges of implementing ISO 9000 by the HEIs are not being widely researched yet and might affect the successful implementation of the standards by HEIs."**

Studies on issues related to the implementation of ISO 9000 standards in education are becoming more prevalent in recent years (Moreland and Clark, 1998; Shutler and Lachlan, 1998; Yeo, 2008). No doubt a plethora of studies have demonstrated that ISO 9000 standards generate better market image, superior product quality, increased customer satisfaction as well as continuous profitability (Brecka, 1994; Casadesu's and Jime'nez, 2000; Gotzamani and Tsiotras, 2001). However, the challenges of implementing ISO 9000 by the HEIs are not being widely researched yet (Othman and Ng, 2007; Yeo, 2008) and might affect the successful implementation of the standards by HEIs.

### Conclusion

The lack of proper interpretation on the implementation of ISO 9000 quality standards by HEIs has created a loophole that might jeopardise the fundamental intentions behind such an adoption (Ho and Wearn, 1996; Osborne, 1997). With Malaysia's aspiration of becoming the regional education hub at stake, initiatives need to be taken to ensure the continuous improvement of service delivery is taking place by understanding the challenges posed in implementing the ISO 9000 quality management standards.

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# Universiti Autonomy as Social Practice

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## Introduction

In Malaysia, the connection between educational reform and the values of Malaysian society needs articulation. Debates over university autonomy and globalisation are usually articulated within a frame of reference caught between two polarities: the market and the state. Universities themselves are deemed to lie between these two spheres. Thus the three key institutional spheres: the university, the market (business) and the state define the 'triple helix' of relationships that characterise knowledge production in the Higher Education sector. According to Henry Etzkowitz, the triple helix 'is a spiral model of innovation that captures multiple reciprocal relationships at different points in the process of knowledge capitalisation.' Etzkowitz argues that the, 'triple helix denotes the university-industry-government relationship as one of relatively equal, yet interdependent, institutional spheres which overlap and take the role of the other' (Etzkowitz, 2002). Contemporary discussions about university autonomy and pedagogical change are couched within an overriding neo-liberal discourse that avoids the critical issues of social value, sustainability and the common good by subsuming them under the aims of competition, consumption and radical neo-liberal individualism (Comaroff and John, 2001). Within such a discursive paradigm structural changes to university institutional governance, administration and function are overdetermined by a competitive and individualistic ethos.

spheres is the assertion that the university needs to restructure its relationships with the market and the state but, also, reform its pedagogy. The demands of the knowledge economy and globalisation necessitate engaging with socially constructivist pedagogy as a way of addressing the limitations and narrowness of traditional authoritarian 'top down' teaching methods. However, the hegemony of neo-liberalism also informs how socially constructivist pedagogy (Phillips, 1995; Slezak, 2000) is taken up and expressed in educational institutions. Socially constructivist pedagogy contains within it a critical binary. This binary can be characterised as a tension between constructivist pedagogy as individual self-expression and constructivist pedagogy as dialogical engagement with social values. The idea that differing forms of pedagogical engagement taken up in universities is autonomous from the overarching values of the institution is flawed. Socially constructivist pedagogy, which is the hallmark of pedagogical reform in a knowledge economy both, informs the broader values of the university and is informed by the values of the university.

Properly understood however, pedagogy is not simply technique. The meaning of constructivism is not immune to the social frameworks and discourses within which it is practiced. Pedagogy is a form of social practice. It involves social capital and draws on cultural traditions. Understood in this way pedagogical practice within a university are forms of social interaction and expressions of cultural values. Pedagogical reform and social structural reform go hand in hand. Nonetheless, the way these changes interact is problematic. An educational project that articulates universities as simply market driven entities and sees autonomy as simply freedom from regulation within a possessive individualistic frame of reference will correspond to a social value system that is individualistic, competitive and possessive. Socially constructivist pedagogy either will be in severe tension with this ethos or identified with it as part of an assault on values and equity.

The social values and capital that inform pedagogy both in its formal level as officially sanctioned techniques but also in its informal level as the implicit practices that characterise human interaction on campus require a much closer look at the relationship between pedagogy, social structure and social values. Constructivist pedagogy taught in an environment that is infused with neo-liberal values of competition, profit, individualism and competition will tend to reward forms of self-expression by students that are possessive, individualistic and competitive. If this thesis is correct then resistance to pedagogical reform in Malaysia's universities will adhere to criticisms of the overly individualised and ethically problematic values that self-expression and individual development take in a neo liberal environment.

**"An educational project that articulates universities as simply market driven entities and sees autonomy as simply freedom from regulation within a possessive individualistic frame of reference will correspond to a social value system that is individualistic, competitive and possessive."**

A corollary of this structural understanding of the role of universities and their relationship to diverse institutional

The adages of neo liberal economic and progressive pedagogical theory are often espoused without adequate recognition of the cultural complexity and problems that characterise host societies. My essential argument is that neo liberal economic and structural reform to universities if carried through uncritically carries with it severe problems if it uncritically accepts a kind of laissez faire market approach to universities (Levin, 2001). This is because marketisation in extremis undercuts the values that inform progressive and normatively engaged pedagogy: especially socially constructivist pedagogy. In other words, pure marketisation undercuts the social values of recognition, respect and cultural value realised through a proper and balanced social constructivist pedagogy. Market values especially as they are institutionalised tend to privilege and reward the individualistic expressive and possessive values that characterise one side of the constructivist binary. The problem with this is that the values of cooperation, dialogue and respectful engagement with others tend to be sidelined by the neo-liberal competitive ethos.

## Civil Society

Marketisation in Malaysian universities must be tempered by also connecting universities to civil society in such a way that tempers both extremes of the state and market and allows a more sustainable relationship between cooperative socially constructivist pedagogy and the social framework within which it operates. In the Malaysian context, the growing salience of civil society, associations, clubs and social movements is acting as a propellant for democratic reform and social legitimacy (Saravanamuttu, 2001; Weiss and Hassan, 2002; Weiss and Hassan, 2002). In an ideological terrain where both the state and the market are viewed with suspicion by different constituencies, the legitimacy that derives from connectivity to the growing civil society in the Malaysian polity is in educational debates largely ignored (Weiss, 2006).

Deepening Malaysian universities connection and engagement with civil society and connecting them more intrinsically to the public good (not as state provision and direction nor as market driven individualism) provides a way to frame autonomy as neither beholden to the state or the market. It also provides cultural space and support for social practices (pedagogy) that are neither radically individualist nor didactically authoritarian. Forms of social capital underpin the ability of Malaysian universities to successfully reform pedagogically and structurally and these factors are reflexive to each other. A failure to include the fourth strand within the helix metaphor of civil society in the discussion of university functioning will lead to unintended consequences both in the legitimacy of the university in Malaysian society and in the legitimacy of forms of pedagogy necessary for the knowledge society.

A corollary of this argument is that any reform to Malaysian education must take into account the specific cultural and national traditions of the host society. A simplistic notion of easy transference between pedagogical

and structural models from the west to Malaysian conditions is bound to lead to difficulty. The types of interrelations that characterise university structures and practices can add or detract from the legitimacy of reform (Sohail, 2003; Mustapha and Abdullah, 2001). They also can add or subtract from the legitimacy within universities of certain approaches to pedagogy.

**"A simplistic notion of easy transference between pedagogical and structural models from the west to Malaysian conditions is bound to lead to difficulty."**

## Innovation

The necessary cultural change and reflexive relationship between social structures and social capital that is a prerequisite to building an effective knowledge society is often under theorised or oversimplified. However an over simplification of our understanding of innovation and development means that fully marketised universities will place negative pressure on principles of collaboration and cooperation which are the hall marks of innovation. Here lies the tension. To defend a space for innovation as collaboration and non-possessive engagement a significant strand of university practice must be involved with civil society and civic engagement. Ultimately, innovation also comes from revisions in pedagogical practice that allow creativity and inspiration to flourish. Yet creativity and innovation rely on cooperative principles of trust (Tonkiss et al. 2000) as much as on freedom from restriction. The practices of engagement with civil society are an expression of lateral engagement and a process of legitimising social interactions that are collaborative, non-hierarchical yet culturally respectful. These values, which are implicit in the turn towards civil society, percolate down to pedagogy.

Cultural and social practices in Malaysia that characterise top down knowledge production and linear forms of information sharing in non-collaborative relationships are the products of social structures and the ideologies that justify and perpetuate them (Malairaja and Zawdie, 2004). These militate against sharing and more dynamic forms of collaboration that characterise the best practices of the knowledge economy. The concept of sharing between multiple participants requires quite a different ethos that tempers competition and strict individual ownership with collaboration and lateral approaches. Both hierarchical and individualistic possessive forms of social relations (and the pedagogy, which corresponds to this) negate the types of

interactions necessary for innovation in the changed circumstances of globalisation. Just as in companies so to in universities the structures and normative value systems that correspond with these structures need to change. In simple terms, Etzkowitz points out, '[t]here is a reciprocal relationship between organisational and cognitive innovation' (Viale and Etzkowitz, 2005).

**"If autonomy is understood as being protected from the market by the state then it is hard to see how creativity and innovation can take root as core values in the academy and by inference in the pedagogy of the academy."**

## Conclusion

If autonomy is reduced to simple marketisation then pedagogy based on collaboration, free dialogue and innovation will be under stress in universities. The pressure of the neo liberal ethos will be too hard to resist. If autonomy is understood as being protected from the market by the state, then it is hard to see how creativity and innovation can take root as core values in the academy and by inference in the pedagogy of the academy. The effective promotion of the 'fourth strand' to the helix structure situates the dynamic possibilities of Malaysian civil society within the university structure (Leydesdorff and Etzkowitz, 2002). It acts to bring legitimacy to universities in an era where suspicion of both the state and the market abound (Berger et al. 1996; Margalit, 1996). Finally such a restructuring provides a better home and support for forms of socially constructivist pedagogy rooted in a concern for democratic growth, respect of difference and dignity.

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# Collaboration for Logistics Education in Malaysia

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## Introduction

The era of information and communication technology has triggered the rapid advancement of the logistics industry which leads to strict global competition in distribution of goods and services in the 21st century. Malaysia, like other countries, has decided to focus on the logistics sector as part of its policies to meet globalisation challenges. This is also a step to meet the demands of the industry and to keep abreast with global development since numerous multinational companies are adopting new business models. One of the challenges emphasised by Malaysia is to develop competent human resource/capital, equipped with the right knowledge and right skills. Views from Crawford (1991) and Drucker (1999) state that a competent and knowledgeable workforce are factors that contribute to the competitive advantage in organisations. Therefore, workers with innovative skills, competency and knowledge will become a great asset to their organisation.

The objective of this paper is to highlight the need for higher education institutions which are regulated by the Malaysian Ministry of Higher Education, to obtain concrete views from logistics practitioners, professional bodies and government related agencies for the development of Malaysian logistics programmes. The logistics practitioners, professional bodies and government related agencies will set a benchmark to identify and evaluate the quality of logistics services. This is because they are the ones who have knowledge based on their rich experience in logistics. In addition, logistics function outsourcing which is practiced locally and internationally requires tactful and sound skills. With the current atmosphere such as globalisation, emergence of *halal* products, emergence of China and India as business hub and cross-cultural working environments, the wisdom and skills of this group of experts will provide the key information needed for designing, amending and adding new logistics programmes in higher education institutions.

## Malaysian Logistics Functional Needs

According to the Third Industrial Master Plan 2006-2020 (IMP3), the Malaysian logistics industry encompasses mainly single specialised service providers such as transport providers, and logistics service providers. The transport service providers include transport operators of air, sea, road and rail, multimodal operators and terminal operators. The logistics service providers, on the other hand, consist of facilitation services (freight forwarders, custom brokers, ship brokers, shipping agents, consolidators, and non-vessel operating common carriers), distribution services (warehousing and transportation, inventory management, and domestic and regional distribution and courier companies), integrated logistics services (third party

logistics providers and lead logistics providers), and business support services [Information, Communication and Technology (ICT) service providers, banking and insurance, education and training, equipment handling, maintenance and repairs, and security].

These two forms of service providers are grouped together and called logistics functions (LeBlanc, 2007; Rahman, 2006; Tamilia, 2000). The effectiveness and efficiency of the service providers in the handling of logistics functions are determined by a continuous acquisition of knowledge via participation in research, seminars, conferences and training. They must equip themselves with the latest knowledge and soft skills to ensure smooth and efficient logistics service delivery which in turn increases their competitive level in global markets. As a result, they are able to gain customer loyalty. The importance of soft skills among the logistics workforce has been emphasised by Centko (1998); Karoly and Panis (2002); Myers et al. (2004).

In order to understand the current needs of the logistics industry in Malaysia, it is critical for the Ministry of Higher Education, Malaysia, to work in alliance with other active logistics service providers and professionals in the industry. For example, the logistics practitioners will provide latest inputs regarding logistics knowledge and skills required by the higher education institutions. These higher education institutions will then use these inputs in designing their programmes and curriculum by reconciling the current trends and demands of the logistics activities.

**"In order to understand the current needs of the logistics industry in Malaysia, it is critical for the Ministry of Higher Education, Malaysia, to work in alliance with other active logistics service providers and professionals in the industry."**

Furthermore, the logistics programmes should focus on clear understanding and application of the logistics concepts. Throughout the world, there is a trend of growing demand for logistics programmes at colleges and universities (Lancioni et al., 2000). However, the demand for competent

logisticians still exceeds the supply provided by higher education institutions (Mangan and Christoper, 2005).

To enhance logistics programmes, logistics practitioners and logistics educationists have started to realise the importance of collaboration. For example, in the United States, the International Business Machine (IBM) has set up strategic collaboration with four universities namely Michigan State University, Penn State University, Arizona State University and University College, Dublin for joint research and study on advanced supply chain and logistics practices (Closs, 2004). In Malaysia, the IMP3 stresses on the development of human resource requirements for Malaysian logistics graduates. This is stated in the IMP3 itself under Chapter 25, page 731:

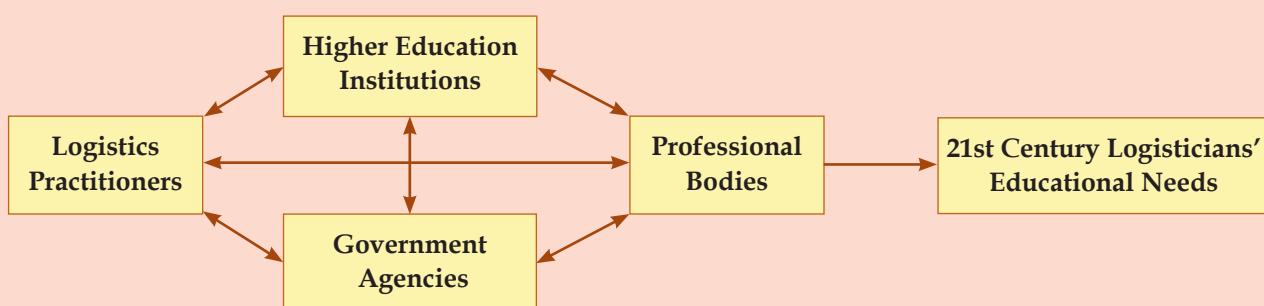
"Within the national education system, there are limited programmes on transport and logistics offered by public and private universities, at both diploma and degree levels. Most programmes offered by institutions of higher learning cater for working adults, where entry requirement takes working experience into consideration."

From the IMP3 statement above, it shows that more programmes in logistics are required for the undergraduate levels. This is to ensure that Malaysia will not be facing any

shortage of logisticians in the future. Not only do we need to increase logistics programmes at undergraduate levels, we would also want to produce logistics graduates who have sufficient skills when they enter the job market. Quality logistics graduates may be produced via programmes which are designed by the collaboration between logistics practitioners and institutions.

### A Study on Collaboration

One strategy that can be implemented in order to produce competent logisticians is via collaboration between logistics practitioners, higher education institutions, government logistics agencies and professional bodies such as the Chartered Institute of Logistics and Transport (CILT). Figure 1 below shows the relationships among the above mentioned entities. In Figure 1, the collaboration among the four entities (logistics practitioners, higher learning institutions, government agencies and professional bodies) is essential to produce holistic as well as marketable logistics programmes. Furthermore, these programmes will serve to improve the skills of logistics graduates and enable them to apply their knowledge and skills in the industry. Failure to provide adequate and competent logistics graduates will slow down the growth of economy in a country (Amuna, 2003).



**FIGURE 1:** Collaboration among logistics practitioners, higher education institutions, government agencies and the professional bodies that contribute to the logisticians' educational needs

Logistics practitioners can play their roles by providing relevant inputs to higher education institutions based on current issues. The importance of developing an effective logistics curriculum related to current issues can be traced back to the views of Berkovski and Gottschalk (1997); Hoek (2000); and Closs (2000). They emphasised the need for current higher education institutions to revise their curricular so that they can produce competent logistics graduates. The logistics practitioners who are involved in day-to-day logistics operations are the right source of input. Their views and opinions will help higher education institutions in designing marketable logistics programmes. Furthermore, the role of practitioners as academicians will promote effective transfer of actual knowledge and skills required by the graduates (Clinebell and Clinebell, 2008). On the other hand, professional transport and logistics bodies such as the CILT can be the "precursor" or initiator for conducting seminars and conferences related to logistics

issues. The goal of the seminars and conferences is to formulate resolutions on reducing the gap between higher education institutions offering logistics programmes and the needs of knowledge, skills and competencies required by logistics practitioners in the actual working environment. Such seminars and conferences will trigger ways on how to develop strategies for preparing competent logistics workforce. This will facilitate the development of holistic logistics programmes.

Meanwhile, the role of government agencies under the Ministry of Transport Malaysia such as the Port Klang Authority, Road Transport Department, Department of Civil Aviation, and other agencies could provide useful inputs regarding logistics trends and patterns in Malaysia. Inputs from the government could be new policies and regulations (locally and internationally), new global business trends, current world economic and political climates and new

technologies that may influence human resource development in the field of logistics.

Further research needs to be conducted on how collaboration in logistics education can be implemented so that institutions of higher learning in Malaysia will be able to produce competent logisticians. As stated by Lambert et al. (1998), there is a need for a comprehensive logistics syllabus from higher education institutions in order to meet logistics challenges and demands.

**"Collaboration between educational system, logistics practitioners, government and logistics professional bodies will ensure holistic and marketable logistics programmes that will be able to meet the demand in the logistics industry."**

## Conclusion

Logistics programmes need to be developed in accordance with the global business trends. Logistics graduates must be able to apply logistics knowledge and skills they acquired from higher education institutions in the working environment. Competency can be achieved by these graduates when they are able to transform logistics knowledge and skills into meaningful performance that match with the logistics needs. Collaboration between educational system, logistics practitioners, government and logistics professional bodies will ensure holistic and marketable logistics programmes that will be able to meet the demand in the logistics industry.

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# Thoughts on Student Mobility: Why Japanese Students are more “Immobile”

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Once a Western researcher called Japan's education system as “immobilist” (Shoppa, 1991) describing conspicuously incremental education reform processes. Now the number of Japanese university students studying abroad has been on the gradual decline since 2004, showing another kind of immobility (OECD, 2008). For instance, approximately 46,000 Japanese went to the United States to study in 2002, but that number shrunk to 34,000 in 2007. Yet the total population of Japanese students at 4-year colleges has been stable even under the lowering birth rate. What are the reasons for this phenomenon? In this article, I will focus on major barriers facing Japanese students.

I would like to use my college as a case in point. My college is a small liberal arts college for women, located in the suburb of Tokyo. I sometimes feel sorry for Japanese students because their college life is too focused on career planning, especially after entering the junior (third) year. They have to be prepared for the coming job hunting season, which is in fall of the junior year. Many students spend hundreds hours contacting sometimes more than 100 companies to get that best job available. At the same time, they start spending much less time on campus (coursework and extracurricular activities). My college is not an exception. Basically all students who seek jobs at corporations do the same thing all over Japan. This means Japanese university students can only focus on their studies essentially for the first two years, and in the junior year, corporations gradually take over their lives. Thus, students who were initially interested in studying abroad (exchange programmes) for a year or a semester have to give up studying abroad due to the heavy work required towards securing jobs. This issue is especially true for science and engineering, medical, dental, and pharmaceutical degree programmes which have demanding workloads.

In the past, the job hunting fiasco used to occur in the senior (final) year, but over years aggressive corporate recruiters competed to seize the best and brightest students as early as possible. This led to reducing the 4-year college study time almost by half. At job interviews, poor students have to answer questions such as “what did you learn at your college?” while they just finished first two years of study at a higher education level. There have been many attempts to stop this type of early recruitment, but in vain. It appears that universities and faculty members have reluctantly accepted this peculiar landscape in Japanese recruitment exercise.

The Japanese labour market operates quite differently from most OECD countries. Unlike countries where hiring is in principle position-based, Japanese recruiters hire employees not for particular positions, but for the

organisation as a whole. Japanese recruiters (either from the private or public sectors) have strong preference for new graduates (22-24 years old) who fit well the lifelong pay scales of the organisations. The recruitment for mid-career people has in fact increased; however, this Japanese tradition of hiring new graduates is still quite strong. Therefore, students cannot afford to “miss the boat.” I believe that this tight job hunting process is one of barriers for the international mobility (short- or long-term) of Japanese students.

Some commentators point out that young generations are so comfortable in Japan that they avoid risky and time-consuming study abroad which requires foreign language study and living in different cultures. Some call this as “inward-looking” attitude. Probably, Japan has a large domestic market where international experiences are not essentially important. In fact, Yonezawa (2009) argues that while women have more international experiences than men during college years in Japan, men have more international work opportunities than women after graduation. Perhaps, this stems from the different treatment of men and women at work (men have more international opportunities than women just because they are men). The old population constantly demand, at policy or practical levels, young people to go outside Japan and compete internationally, referring to globalisation, internationalisation, worldwide competition, etc. However, it is not so easy to change people's thinking, attitudes and behaviours.

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# **Malaysia-Cambodia Workshop on Higher Education and Developing Human Capital: Towards Strategic Partnerships and Alliances**

*Reported by Ooi Poh Ling*

The Malaysia-Cambodia workshop on Higher Education and Developing Human Capital which was held on 25-26 February 2009 in Phnom Penh, Cambodia is part of the effort by the Malaysian government to strengthen collaboration, particularly in the domain of higher education, with four Southeast Asian countries namely Cambodia, Lao PDR, Myanmar and Vietnam. It was organised by the Ministry of Higher Education Malaysia the with co-operation of the Cambodian Directorate General of Higher Education, Ministry of Education, Youth and Sports and the respective departments/agencies overseeing the higher education sector in Cambodia, while the National Higher Education Research Institute (IPPTN), Universiti Sains Malaysia provided intellectual and technical support. Seventeen delegates from Malaysia and fifty participants from Cambodia were present.

The two-day workshop was officiated by the Honourable Dr. Phoeurng Sackona, the Secretary of State, Ministry of Education, Youth and Sports of the Kingdom of Cambodia. The five topics of the workshop are as follows:

- Higher Education: Present and Future Directions;
- Partnering and Alliances in the Academic Sector;
- Partnering in Quality Assurance;
- Linkages, Staff and Student Exchanges;
- Partnering and Alliances in the Research Sector.

The breakout session on the second day of the workshop yielded a lot of suggestions from participants from both



Malaysian delegates having friendly conversation with Cambodian counterpart.

countries. It showed the determination from both sides to make the collaboration a successful implementation of plans. The Ministry of Higher Education Malaysia expressed its strong commitment in ensuring that actions will be taken based on realistic measures. One of the projects identified is agricultural research and the collaboration entails experts, staff, and student exchange. The Malaysian government will provide the necessary financial and technological support.

Y.Bhg. Dato' Professor Mohd. Yusof Kasim in closing the workshop highlighted several critical points which are not only key issues towards a successful collaboration, but also heralded the resolutions made.



Delegates and participants of the Malaysia-Cambodia Strategic Dialogue in a group photograph with the Secretary of State, MoEYS, H.E. Dr. Phoeurng Sackona.

# ANNOUNCEMENTS

## Invitation to Participate



13-16 December 2009 • Parkroyal Hotel, Penang, Malaysia

### GLOBAL HIGHER EDUCATION: CURRENT TRENDS, FUTURE PERSPECTIVES



#### Sub-themes of the Forum

##### 1. Sub-theme 1: HE Regionalisation and Harmonisation: One Model Fits All?

- Diversity of HE models, either existing or that existed in the recent past
- Current trends in regional harmonisation of HE systems
- Challenges and issues in regional HE cooperation

##### 2. Sub-theme 2: HE in a Globally Competitive World – From a Tradable to a Competitive Commodity

- Should HE be a tradable commodity?
- Cross-border HE and internationalisation: Are there losers?
- Global ranking and benchmarking of HE institutions: Who benefits?

##### 3. Sub-theme 3: HE in Times of Global, Financial and Economic Turbulence

- Repercussions of the economic crisis on the HE sector: Funding, student enrolment, quality, etc.
- Will HE in the South be affected in the same way as in the North? What will be the impact on national growth and development?
- How can challenges be overcome? Are there avenues for North-South HE collaboration?

##### 4. Sub-theme 4: Scenarios for HE Futures

- HE to serve local or global needs, or both?
- Alternative models of HE futures
- Embedding values and service to humanity in HE futures

#### Approach

The GHEF2009 will deliberate on all of the above sub-themes from both global and regional perspectives. We plan to organise plenary sessions and/or panel discussions based on (1) a global perspective, (2) a single region and (3) a comparative perspective of several regions.

#### Important Deadlines

Pre-GHEF 2009	13 December 2009
Submission of Full Paper	31 August 2009
Closing Date for Registration	15 November 2009

Papers will be uploaded onto the website by mid September 2009.

## Participation

The Global Higher Education Forum (GHEF2009) brings together scholars, policy makers, researchers, academics and administrators to reflect, analyse, discuss and debate on a wide variety of issues pertaining to global higher education in a south-south context. In particular, GHEF2009 will focus on the theme of Global Higher Education, seeking to ponder and reflect on the benefits and challenges and at the same time, envision the way forward for emerging and expanding, rather than for established, higher education systems.

## Registration Fees

Category		Early bird registration (before 15 Sept. 2009)	Normal registration (15 Sept.-15 Nov. 2009)
Local	Participant	RM800.00	RM900.00
	Group (3 & above from the same organisation)	RM700.00 each	
	Student*	RM300.00	
International	Participant	USD800.00	USD900.00
	Group (3 & above from the same organisation)	USD700.00 each	
	Student*	USD300.00	

\* Please send a photocopy of student ID together with the Registration Form.

Registration fee covers conference materials, four tea-breaks, two lunches and one dinner.

- Payment for early bird registration should be made before **15 SEPTEMBER 2009**.
- Full payment must be made on or before **15 NOVEMBER 2009**.
- Closing date for registration is **15 NOVEMBER 2009**.

## Method of Payment

1. By Bank Transfer in RM/USD in favour of "Bursar Universiti Sains Malaysia"

Account Number	070-20001054-716
Bank Name	BANK MUAMALAT MALAYSIA BERHAD
Bank Address	SERVICE CENTRE, UNIVERSITI SAINS MALAYSIA, BANGUNAN D12, 11800 USM, PULAU PINANG
Telephone	604-660 4600
SWIFT CODE	BMMBMYKL
Reference Remarks	GHEF2009 and name & institution of participant(s)

2. By Bank Cheque in RM/USD in favour of "Bursar Universiti Sains Malaysia"

Please send your cheque with a cover note indicating participant's name, institutions and payment for GHEF2009.

## Social Visit—Heritage Enclave, George Town

A social visit will be organised for forum participants on 16 November 2009. Participants will be taken on an enlightening three hour leisurely stroll around the inner city of George Town – an 'open museum' showcasing displays of Penang's rich cultural history and past migration, significant buildings and landmarks.

## Registration and Further Information

Detailed programme on the GHEF2009, on-line/off-line registration, hotel information, etc., is available on the GHEF2009 website: <http://www.gheforum.usm.my>. If you wish to be in the mailing list for updated information, please e-mail to: [gheforum@usm.my](mailto:gheforum@usm.my) or [ipptn@usm.my](mailto:ipptn@usm.my).

# Invitation to Participate & Call for Papers

## University-Community Engagement for Sustainability



University-Community Engagement Conference 2009

23-26 November 2009

Bayview Hotel, George Town Penang, Malaysia

Organised by



in collaboration with

Global Alliance on Community Engaged Research (GACER)  
and UNESCO-APEID



### Objectives

1. To discuss the social responsibility and changing roles of universities
2. To explore methods, experiences and strategies of community engagement
3. To network, share experiences and showcase good practices in university-community partnerships
4. To promote and legitimise the scholarship of engagement in the Asia-pacific region

### Sub-themes

- Changing roles and social responsibility of universities for sustainable development
- Challenges and experiences of engagement of academe/ university with community/industry
- Approaches, methods and strategies in engaging with communities
- Theory and practice in the scholarship of engagement

### Who Should Attend?

- University academics and administrators who are involved or interested in engaged scholarship and service learning
- Workers, volunteers and trustees from community and public sector organisations
- Undergraduate and postgraduate students
- Anyone interested in university-community engagement
- Government, non-government and corporate organisations
- Funding bodies and policy makers
- Service users and community members

For participants from developing countries, a discount can be considered upon request.

### Conference Fees

Early Bird Registration (On or before 15 Sept. 2009)	Local RM300.00 International USD300.00
Registration (After 15 Sept. 2009)	Local RM350.00 International USD350.00
Post-conference Workshop	Local RM100.00 International USD100.00

### Keynote and Plenary Speakers

- Prof. Tan Sri Dato' Dzulkifli Abdul Razak  
Vice-Chancellor, Universiti Sains Malaysia, Malaysia
- Dr. Rajesh Tandon  
Society for Participatory Research in India (PRIA), India
- Prof. Budd L. Hall  
University of Victoria, Canada
- Prof. Shirley Walters  
University of the Western Cape, South Africa
- Mr. Tan Jo Hann  
KOMAS, Malaysia

### For more information, please contact:

The Secretariat  
University-Community Engagement Conference  
c/o The Institute for Research in Molecular Medicine  
(INFORMM)  
Universiti Sains Malaysia  
11800 Penang  
MALAYSIA  
Phone: (604) 653 4814/4813 Fax: (604) 653 4803  
Email: ucec@notes.usm.my  
Website: <http://www.usm.my/icn/ucec/>

# RESEARCH UPDATES

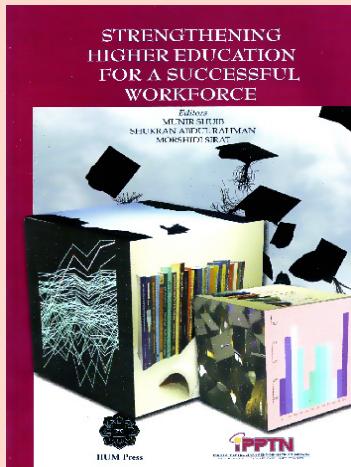
## Research Grants from MoHE/IPPTN/USM

1. University Rating System for ASEAN/Southeast ASIA
2. Impact of APEX Status on USM: Transformation and Achievement
3. The Financial Sustainability of the National Higher Education Funding Corporation (PTPTN)
4. Strategic Roadmap for the Private Higher Education in Malaysia
5. The Acceptance Level of Entrepreneurship in Institutions of Higher Learning
6. International Students in Malaysia
7. Nurturing Learning and Higher Education Transformation: Academia Accountability
8. Malaysian Teacher Quality for Human Capital Development
9. Social Cohesion and Higher Education
10. OECD/IMHE Review of Higher Education Institutions in Regional Development - Presenting the Penang Region/City-Region
11. Future Directions of Academic Programmes in Higher Education Institutions

## External Grants

1. Employability of University Graduates (Malaysia/Indonesia/Philippines), UNESCO Jakarta
2. Employability of ICT Graduates (Indonesia/Philippines/Malaysia/India/Korea), UNESCO Bangkok
3. Building Asia-USA-Europe Collaborative Knowledge, Learning, Innovation, Capacity Research for a Sustainable Development: Bridging the Divide. Funded by UMAP Research-Net (URN), Bangkok
4. Diversification of Post-Secondary Education to Expand Access and Improve Relevance. Funded by Governance and Management in Education, International Institute for Educational Planning (IIEP/UNESCO)

# PUBLICATION



*Strengthening Higher Education for a Successful Workforce* is a timely collection of thought-provoking articles for educators and policy makers in higher education in determining the direction to set in the future with regards to producing a successful workforce. It also seeks to complement the existing discussion on HE-related issues particularly the ones that emphasise on unemployment among HLI graduates. The book features in-depth discourses by academic members of different disciplines, who present their critical views and research findings, discuss pertinent issues and challenges and identify strategies to strengthen the higher education sector. *Strengthening Higher Education for a Successful Workforce* is especially recommended for educators and administrators seeking to chart a successful future for the students in their HLI and ultimately for their nation.

### Editors

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Watkins, D. (1998). A cross-cultural look at perceptions of good teaching: Asia and the West. In J. J. F. Forest (Ed.), *University teaching: International perspectives*. New York: Garland.

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